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THE GOVERNMENT OF THE PHILIPPINE ISLANDS
DEPARTMENT OF PUBLIC INSTRUCTION
PHILIPPINE HEALTH SERVICE

REPORT OF THE PHILIPPINE HEALTH SERVICE

FOR THE FISCAL YEAR FROM JANUARY 1
TO DECEMBER 31, 1917

J. D. LONG, M. D.
DIRECTOR OF HEALTH

MANILA
BUREAU OF PRINTING
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ANNUAL REPORT OF THE PHILIPPINE HEALTH SERVICE, FISCAL YEAR 1917.

DEPARTMENT OF PUBLIC INSTRUCTION,
PHILIPPINE HEALTH SERVICE,
Manila, March 11, 1918.

SIR: I have the honor to transmit herewith the annual report of the Philippine Health Service for the fiscal year ending December 31, 1917.

ROUTINE WORK.

The routine work of the Service was carried on in an entirely satisfactory manner, and all work was gotten out and handled promptly. The various divisions of the Service coöperated splendidly and, almost without exception, real interest and enthusiasm in the work of the Service were constantly manifested by the various officers and employees.

EPIDEMIC DISEASES.

During the year 1917 there were no serious epidemics.

CHOLERA.

Cholera was present throughout the year in the provinces to about the same extent as in 1916. In 1916 there were a total of 11,633 cases and 7,473 deaths in the provinces; in Manila, 1,214 cases and 513 deaths. In 1917 there were 13,082 cases in the provinces, with 7,959 deaths; in Manila, there were 25 cases and 8 deaths. Eighteen of the 25 cases in Manila occurred in the months of January and February and represented the last of the outbreak of 1916. In spite of the number of cases that occurred in the provinces, the disease cannot be considered as having been epidemic, as the cases were scattered in nature and any tendency to outbreak was promptly controlled. The disease, however, showed a tendency to persist and reappear from time to time in sporadic form, much as it behaved in 1916.

The success had in controlling the disease in the city of Manila was due to the fact that more intensive work could be carried out in Manila than in the provinces, and also to new factors discovered regarding the epidemiology of cholera.

The cholera organism or vibrio commonly agglutinates in the presence of a cholera immune serum. There were, however, during the year a number of vibrios discovered that were nonagglutinable to cholera immune serum, and upon various occasions the same individual would show both agglutinable and nonagglutinable vibrios. As soon as this fact was definitely established, the same measures were applied to persons who showed nonagglutinable as to those showing agglutinable vibrios. It is believed that this measure has been productive of considerable practical results in the control of the disease.

The measure was also followed of examining cases after discharge from San Lazaro Hospital, at intervals for a period of eight weeks after discharge, in order to determine whether they were showing the cholera vibrio in their stools, as observations made had shown that cholera carriers are oftentimes intermittent as regards the presence of the cholera vibrio, somewhat in the same manner as are typhoid carriers. In several instances positive results were obtained and the persons were isolated and foci of infection thus removed.

Could measures of the same type have been carried out in the provinces, it is believed that similar results could have been obtained. On account, however, of the territory to be covered and the numerous personnel required, such detailed measures were obviously impossible. The ultimate solution of the cholera problem in the provinces will depend largely upon a further extension of water systems and the general adoption of a proper means of sewage disposal. As will be mentioned later, satisfactory progress was made during the year as regards both water supplies and sewage disposal.

SMALLPOX.

During the year 539 cases and 253 deaths from smallpox were reported from the provinces; 3 cases and 2 deaths were reported in the city of Manila. None of the cases that occurred in the city of Manila obtained their infection there, but came from the outside during the incubation period of the disease. One case came from Hongkong and was sent from quarantine to San Lazaro, and the others came from outlying districts.

An increase has been noted during the year in cases of varioloid, 120 cases having been reported, as compared with 62 cases during 1916. In neither year were there any deaths from this disease. This can only be interpreted as an attenuation of the immunity conferred by the general vaccination of the city about fifteen years ago. On that account, vaccination was carried on rather extensively during the year and will be continued during the coming year until the city has been once more completely vaccinated. A total of 81,390 vaccinations were made by the personnel of the health stations. Vaccination was also carried out more extensively than ever in the provinces, and particularly in those provinces which were among the first to be vaccinated some years ago.

PLAGUE.

There has been no case of either human or rat plague report in the Philippine Islands during the year 1917. The last case of human plague occurred September 12, 1914, and the last case of rat plague was found in 1916, the same being of "chronic avirulent" type.

DYSENTERY.

Dysentery appeared upon several occasions in isolated places but did not assume serious proportions.

TYPHOID FEVER.

Considerable attention has been devoted to typhoid fever during the year. The causes of the persistence of this disease in Manila have been studied by two commissions, one during 1916 and the other during 1917. The findings of both commissions are practically the same; that is, that the persistence of the disease is due to contact of persons with either cases or carriers, and more often cases than carriers, as in spite of the great number of examinations that have been made for the detection of typhoid carriers, very few have been found.

There was apparently a slight increase in the number of cases in 1917 as compared with 1916. It is not believed, however, that this apparent increase is real, as heretofore cases of typhoid fever have not been reported with anything like regularity. Considerable progress, however, has been made in this matter, as indicated by the following figures: 243 cases were reported while still alive in 1916 and 348 cases in 1917.

The measures adopted to control the disease are prompt hospitalization of cases, either in private hospital or at San Lazaro, and blood and stool examinations of all persons within the vicinity of the case, whether actual contacts or not, for the purpose of determining whether or not they are carriers or in the incubation stage of the disease. Of course, all the usual routine measures, as the taking of precautions with reference to water, milk, food, flies, disinfections, etc., are carried out in all instances.

More attention is also being paid to the presence of typhoid fever in the provinces. There have been no epidemics reported nor have any been detected. An apparent increase in the number of cases as compared with previous years is believed to be due to the increase interest being manifested in the control of the disease, which brings about more prompt and better reporting of cases.

DIPHTHERIA.

In the provinces it is noted that more interest is taken in the reporting of cases of diphtheria and that more frequent requests are being received for antidiphtheretic serum for the treatment of cases. So far as is known no outbreaks of the disease have occurred in the provinces, although cases have been reported from time to time.

In Manila there is a diminution as compared to 1916, the figures of the two years being as follows:

1916: Cases reported 164; positive, 114; deaths, 30.
1917: Cases reported 110; positive, 79; deaths, 27.

Diphtheria as a rule is fairly promptly reported and little if any opposition is manifested regarding isolation, measures of disinfection, etc.

CULION LEPER COLONY.

In spite of a serious handicap as regards a lack of funds, much good work has been done. The lepers themselves built a clubhouse, exclusively with leper money and workmen, and an electric light and power company has been organized with leper capital, in conjunction with the already existing ice and fish company.

A much needed chief's residence was built, having been authorized over five years, ago. Much progressive building has been going on by the lepers themselves and additional space has been allotted for dwellings in the location of the new sanitary barrio. This was an imperative need, as the leper colony population is fast overstepping the five thousand mark.

Great interest has been taken in the planting of home vegetable gardens for local consumption, a feature of marked value in varying the monotony of native diet. The Health Service model house also bids fair to become the prevalent type of structure, several lepers having made plans to construct these houses for themselves.

COUNCIL OF HYGIENE.

The Council of Hygiene held regular monthly sessions as required by law, and 14 special sessions. Routine matters were handled in the regular sessions and in the special sessions considerable attention was devoted to legislation of various types.

FOOD AND DRUG INSPECTION.

The Board of Food and Drug Inspection held semimonthly meetings and considered numerous shipments of food and drugs which were held at the customhouse pending the action of the Board. A number of samples were collected by the food and drug inspector, and a fairly large quantity of food products was condemned as being unfit for use. Five administrative decisions were issued under the Food and Drugs Act and a standard was adopted for salt manufactured in the Philippine Islands. Seven convictions were obtained for violations of the Food and Drugs Act.

PROVINCIAL CEMETERIES.

Sixty-seven were reported as insanitary in 1917, as against 124 in 1916. Ninety-eight were reported as good in 1917, as against 44 in 1916. Seventy-five new cemeteries were approved.

HOSPITALS.

In accordance with Act No. 2725, the Southern Islands Hospital was separated from the Philippine Health Service, effective January 1, 1918, and placed under the control of the Philippine General Hospital. One new hospital was opened at Albay, Albay. Bohol, Pampanga, and other provinces have hospital projects under consideration. The operation of the hospitals generally was satisfactorily and economically conducted, and the attendance was greater than in the previous year. The activities at San Lazaro were increased by the construction of a new tuberculosis hospital with accommodations for 125 patients and the construction of a home for the aged and infirm with a capacity of 50 patients. The tuberculosis hospital was built by the Service, of sanitary-house material, in 63 working days, at a cost of ₱23,000. Construction work has also been begun by the Bureau of Public Works on a concrete building for use as a ward for female insane. When this building is completed facilities will be available for about 150 to 200 more insane patients.

SANITARY WORK IN THE PROVINCES.

Two additional provinces, Isabela and Tarlac, organized into sanitary divisions. The partial organization of the Province of Misamis was extended to complete the organization. Preliminary steps toward the organization of all the remaining provinces have been completed, with the exception of the Provinces of Cavite and Bataan, and during the first months of the year 1918 the sanitary organization will be completed. The number of nurses doing public health work in the provinces and maintained at provincial expense has been increased to 39. Data so far available indicate that 56 new dispensaries have been opened during the year, which will bring medical relief to 127,000 persons who have not had such relief heretofore. Four new provincial laboratories were opened, so that now a majority of the provinces are provided with laboratory facilities. The number of cases of rabies has been reduced and the use of prophylactic treatment has become more extensive. In the Province of Albay, which was formerly the principal focus of the disease in the Islands, no deaths occurred. Approximately 18,000 stray dogs were destroyed by the use of strychnine. The number of municipalities which have approved ordinances requiring the installation of Antipolo sewage system or better has now reached 193 and the number of Antipolo system privies used has reached 42,314. The movement is still continuing and it is believed that 1918 will show a very large increase. Three new gravity water systems were installed during the year, as follows: Calapan, Mindoro; Bani, Pangasinan; Magallanes, Sorsogon. Three more are under way in Bohol and Antique. One hundred and eight new artesian wells were drilled. The above statements as to installation of Antipolo systems and water supplies mean that 200,000 additional residents of the provinces are now provided with sanitary toilets and 150,000 are provided with safe water, that have not heretofore had such facilities.

SANITARY COMMISSIONS.

The appropriation Act for the fiscal year 1918, approved December 20, 1917, did not contain a provision for the continuation of the work of the sanitary commissions. Effective, therefore, January 1, 1918, this work will be discontinued. During the two years in which the commissions have been in operation a total of 13 towns have been surveyed and 9 have been resurveyed. The resurveys were made usually at the expiration of a year after the termination of the first survey. Of the nine towns resurveyed, four showed a reduction in the total death rate, the greatest reduction being at Obando, Bulacan, where the death rate at the time of the survey was 37.52 per thousand, and the resurvey made after the expiration of a year showed a reduction to 29.93 per thousand. The greatest effect of the work of the sanitary commissions was manifested in diminutions of infant mortality in children under one year of age. Six towns upon resurvey showed a decided reduction under this age, two remained stationary, and one showed a slight increase. The greatest results that have been obtained in the work of the sanitary commissions have been the development of the Antipolo sewage disposal system and the sanitary house. A future benefit of far-reaching importance will be the installation of a system of health organization in sanitary divisions which, for want of a better name, has been tentatively designated "the automatic health organization." This system consist, briefly, in a series of maps, curves and charts, card indexes and cross indexes, based upon the data which has been obtained through the work of the sanitary commissions, and which will be installed on the ground in each sanitary division of the Philippine Islands as rapidly as may be possible. When this type of health organization has once been established, it will be possible for the health officer to know at once what particular factor is bringing about an increase in morbidity or mortality and it will indicate with a reasonable degree of exactness the probable origin of the infection which is producing the morbidity or mortality. A little further and more detailed investigation will then enable the health officer to locate the cause with certainty. The system will be tried out during the coming year, and after experience has shown the difficulties that will need correction and additions that may be needed, it will be applied generally to the sanitary divisions throughout the Archipelago.

TUBERCULOSIS.

As a result of the data obtained by the sanitary commissions and of the statistical study made by Passed Assisstant Surgeon L. R. Thompson of the United States Public Health Service, it has been shown that the death rate from tuberculosis in the Philippine Islands is 2.64 per thousand of the population. This means, on an estimated population of 10,000,000, 26,400 deaths from tuberculosis per year. The death rate of the Philippine Islands in 1902 was about 45 per thousand. This figure has fallen to about 24 per thousand at the present time. In 1902 tuberculosis constituted about 9 per cent of the total mortality. At the present time it constitutes over 21 per cent. It is believed that the above brief statement is sufficient to show the absolute necessity of further and more effective action being taken to control the spread of this disease than is possible at the present time.

CLERICAL WORK.

The operation of the various divisions or offices of the Service has been very satisfactory during the year. The work of the clerical office, due to the extension of the activities of the Service, has been particularly hard, a daily average of over 420 pieces of mail being handled. The financial section, with an increase of but one employee, handled very satisfactorily the appropriation of the Service and the additional appropriation made necessary by Act No. 2671 and the placing of the hospital ship in operation.

OFFICE OF HYGIENIC AND INDUSTRIAL DEVELOPMENT.

A sanitary model house was demonstrated at the Carnival in Manila in February, 1917. The house was visited by 149,008 persons. Fifty-four additional women's clubs have been organized during the year and 25 "centros de puericultura" for the protection of early infancy have been incorporated. Seventeen baby contests were held, and 33,778 promises for the establishment of home gardens have been received, an increase of 19,380 over the previous year.

DISTRICT NURSING.

The district nursing division has continued its house-to-house visits for the purpose of improving the hygiene of home and has succeeded in gaining the confidence of the people. The visits of our nurses are now appreciated and a constantly increasing number are asking advice and instruction and, what is still better, are following the instructions given. This division has also assisted in the organization of women's clubs in provincial towns, has assisted in baby contests, has had charge of exhibits at various town fiestas, has distributed large numbers of circulars on health subjects, and has given a great many demonstrations in the preparation of balanced diets. A total of 12,884 domiciliary visits were made.

PROPERTY OFFICE.

The property office, in addition to a number of requisitions, has issued 1,253,410 units of vaccine and has received and passed inter-Bureau vouchers and bills of a value of ₱310,132.62.

MINDANAO AND SULU.

Satisfactory progress has been made in health and hospital work in the Department of Mindanao and Sulu and several new hospitals have been opened and others begun.

SEPARATIONS FROM THE SERVICE.

Due to the exigencies of the military service, the following officers have been called to the colors:

Senior Medical Inspector Alfred C. Garton.
Senior Medical Inspector Almon P. Goff.
Senior Medical Inspector Arlington Pond.
Senior Medical Inspector Henry Pick.
Assistant Surgeon Paul McC. Lowell.

Other separations have occurred as follows:

Resigned:
  Senior Medical Inspector Frank W. Vincent.
  Senior Medical Inspector James W. Smith.
  Assistant Surgeon William P. Burns.
Died: Senior Medical Inspector Mascuña.

SUMMARY.

Upon the whole the work of the Service has progressed very satisfactorily during the year, especially good results having been obtained in water supplies and sewage disposal, in the formation of women's clubs and societies for the protection of early infancy, and in the sanitary organization of the various provinces.

The Daily Bulletin, begun in June, 1917, met with almost immediate popular approval and many favorable comments were made by both the press and the public, the most notable being one made at the joint meeting of the Colegio Medico Farmaceutico and the Philippine Islands Medical Association. Numerous requests have been received for missing numbers, thus demonstrating the desire that exists for education in public health matters.

The following résumé will give a few of the salient points of the accomplishments of the Philippine Health Service for 1917:

SPECIAL FEATURES OF WORK IN 1917.

A. SANITARY WORK IN THE PROVINCES.

(*a*) Greatest results of the work of the sanitary commissions shown in reduction of infant mortality.

(*b*) Foundation laid for installation of Automatic Health Control system.

(*c*) Three additional provinces, making twenty-seven in all, organized into sanitary divisions.

(*d*) Fifty-six new dispensaries, serving 127,000 population established, making a total of 422 dispensaries serving over 500,000 people.

(*e*) Three new provincial hospitals opened or started.

(*f*) Four new provincial laboratories provided for, making 22 in all.

(*g*) Forty district nurses made over 18,000 visits to the homes of sick, and gave instruction in hygiene, nursing and dietetics.

(*h*) One hundred and ninety-three municipal ordinances passed requiring installation of Antipolo sewage systems of which 42,314 were established, serving over 200,000 people.

(*i*) Additional water supplies were completed to provide for about 150,000 people.

(*j*) Only 67 insanitary cemeteries found, whereas 98 were inspected and passed and 75 new cemeteries approved.

B. SPECIAL SANITARY AND HYGIENE EFFORTS.

(*a*) Eduction and publicity, as promoted by a daily health bulletin distributed to all parts of the Islands and printed in the daily papers. Also lectures and moving picture work.

(*b*) The acceptance and adaptation of the Health Service sanitary-house plans. Much interest has been stimulated in this reformation of insanitary dwellings.

(*c*) The foundation of 54 new women's clubs, making 111 in all. This is the most effective single measure yet evolved in reducing infant mortality, correcting the very prevalent dietary errors, improving domestic hygiene, or in fact in any way improving the family, social, and economic standards.

(*d*) Social service and sick-visiting work by district nurses in all municipalities. The frequent appearance of these nurses is a great stimulant to higher living standards.

(*e*) Gradual reformation of poorly balanced national diet. Effected through:

1. Forty-seven thousand home gardens planted with a sufficient variety of acclimatized vegetables.
2. Bulletin prepared giving menus and recipes for 30 consecutive days, adapted to Philippine needs and customs.
3. Instruction in dietetics and cooking by district visiting nurses.
4. Publicity campaign against polished rice as a national food.

(*f*) Country-wide installation of Antipolo sewage systems, and potable water supplies. Conditions are still far from satisfactory in this respect as evidenced by sporadic and endemic outbreaks of intestinal diseases.

(*g*) Careful statistics have been gathered and considerable publicity has been stimulated in preparation for an aggressive campaign in view of the necessity of curtailing the extremely high incidence of tuberculosis in the Philippines.

C. EPIDEMIOLOGY.

(*a*) Cholera has been kept under control, though sporadic outbreaks were prevalent. Incessant watchfulness and prompt energetic work were constantly required.

(*b*) Seasonal incidence of dysentery of progressively decreasing importance, due largely to improved water supply and sewage facilities.

(*c*) Plague not present.

(*d*) Smallpox susceptibility on increase as shown by increasing varioloid. Immunity established by general vaccination of 1906 wearing off.

(*e*) Malaria still very prevalent in inaccessible remote districts, but is being eradicated in centers of population susceptible to mosquito extermination and free dispensing of quinine.

(*f*) Rabies has been controlled by distribution of antirabic treatment as well as by the destruction of over 22,000 stray dogs.

(*g*) Attention has been more particularly directed through two special commissions to the incidence and careful diagnosis of typhoid with a resulting increase in the number of cases reported, as compared with previous years.

(*h*) Diphtheria has been materially curtailed by the free distribution of antidiphtheria serum.

(*i*) Preliminary surveys have been conducted as to the prevalence and local etiology of tuberculosis, and sufficient statistics have been compiled to warrant a definite and organized sanitary campaign against this disease for the next several years.

(*j*) Routine fly, rat, and mosquito extermination work has been kept up in collaboration with the above epidemiological efforts.

D. VARIOUS WORK.

(*a*) School inspection has developed to the utmost latitude compatible with present appropriations.

(*b*) Confidence of the people and coöperation of local practitioners have been materially increased both through results obtained and through aggressive publicity work.

(*c*) Substantial construction work at Culion and San Lazaro Hospital as well as elsewhere, despite a low water mark of appropriations for these purposes, was carried out.

(*d*) Great interest and advancement in sanitary work has been noticeable among the non-Christian tribes and in Agusan.

J. D. LONG,
Director of Health.

The Honorable
the SECRETARY OF PUBLIC INSTRUCTION,
Manila, P. I.

REPORT OF THE DIVISIONS OF GENERAL INSPECTION AND HOSPITALS.

[Assistant Director of Health VICENTE DE JESUS, *in charge.*]

COUNCIL OF HYGIENE.

Following is the report of the President of the Council of Hygiene:

In compliance with the provisions of the by-laws of the Council, I have the honor to submit herewith for the consideration of the members of the same, the following memorandum which comprises all the activities of the Council during the year 1917:

During the year just ended, the Council held 12 regular sessions, as required by law, and 14 extraordinary sessions. This tends to prove that this advisory body has met only when strictly necessary to deal with affairs of real public interest. In the regular sessions the following subjects were treated: Discussion and approval of the report submitted by the committee on the selection of the most appropriate site for the construction of a proposed sanitary barrio in this city. Concurrence of the Council in the nominations of the presidents of the sanitary divisions of Isabela and Leyte. Comment, upon the request of the Municipal Board of the city, regarding the best way of distributing among the poor children within the municipal radius, milk, for which ₱20,000 had been appropriated. Discussion of the proposed law regulating the practice of the phramaceutical profession. And the preparation and draft of a program for the entrance and promotion examinations in the Philippine Health Service.

In the 14 extraordinary sessions, the following question were considered: Suggestions and recommendations of the Council to the League for the Protection of Early Infancy, at the request of the latter entity, regarding the best method to extend and generalize the use of tiqutiqui extract in the Archipelago. A resolution adopted concerning the cultivation of the water hyacinth in the sense of forbidding its cultivation. Approval of the question papers for the examination of junior and senior surgeons, medical inspectors and senior medical inspectors of the Philipine Health Service. Discussion of sections 1 to 12 and 13 to 29 of the proposed pharmacy law. Discussion and approval of the regulations of the Board of Pharmaceutical Examiners. Discussion and approval of a proposed law concerning drugs. A resolution replying to the Municipal Board on the question of petrolization.

The proposed law regulating the practice of pharmacy in the Philippines was considered by the Council to be of so much importance that two regular sessions and eight extraordinary sessions were given over to careful and detailed study of the project.

The Legislature, fortunately, approved during its last session an Act regulating pharmacy, which, aside from a few minor differences, is practically the same as the proposed law submitted by the Council to the Departments of Public Instruction and of the Interior through the Director of Health. The adoption of this legislative measure should be a source for congratulation to the members of this Council and a stimulus to them to enhance their noble purpose of promoting the public weal.

During the year it was with great regret that the Council was forced to accept the loss of the valuable services rendered by one of its most prominent members, Mr. José Escaler, who resigned his office as the lawyer-member of the Council. He was, however, substituted by the no less intelligent and active city attorney, Mr. Anacleto Díaz, who has given his most efficatious coöperation in the solution of the several difficult problems submitted to the Council.

We are now in the beginning of the year 1918, and the work of the Council for this year should be briefly outlined. It would be advisable, for example, to study the legislation regulating the practice of midwives, nurses, opticians, dentists, and physicians in the Philippines, as the laws now in force affecting these professions are deficient in several respects. It would also be proper for the Council of Hygiene to suggest measures for the purpose of establishing provincial sanitation based upon modern bacteriological science, in order to forward the work of investigation, and also the gradual development of hospitals and dispensaries in the provinces, and it would be, moreover, desirable and commendable, that all and each of the different members of the Council should write a program or synopsis of the subjects he deems it would be proper to discuss in the sessions of the Council during the year, as the success of this body can oly be secured through the efficient coöperation and good will of every one of its members.

FOOD AND DRUG INSPECTION.

The Board of Food and Drug Inspection held semimonthly meetings, to pass upon questions arising in connection with the enforcement of the Food and Drugs Act and Act No. 2342, and to receive protests against any action taken in their administration.

Of importations of foods of which samples were submitted to the Bureau of Science, 37 were admitted without change of label; 30 were admitted on amendment of label, 11 of these being coal-tar colors not permitted in food products, which were admitted upon being labeled "This color should not be used for food purposes;" 7 found to be decomposed were rejected; and 6 were awaiting report of the analyst of the Bureau of Science at the end of the year.

Numerous shipments of medicines arrived without the formula expressed as required by law and were held at the customhouse until proper formula should be affixed.

In addition, samples were collected by the food and drugs inspector and analyzed by the Bureau of Science as follows:

Aerated water	158
Liquours	31
Foods	319
Drugs	71
Food colors	3
Drinking waters	172
Total	754

Also numerous samples from the provinces were submitted by the district health officers.

The following food products were condemned:

Sardines	can	1,800
Sardines	case	1
Herring	do	2
Grayfish	can	83,908
Dried fish	basket	2
Pork	kilo	20
Meat, canned	case	1
Pigs' feet, canned	do	4
Meat and vebetables, canned	do	10
Vegetables, pickled	do	6
Vegetables, canned	do	4
Cheese	keg	1
Cheese	case	1
Jam	kilo	400
Biscuits and preserves	case	1
Mustard paste	do	1
Condensed milk	do	8

During the year section 1 of Act No. 2342 was amended by Act No. 2680, making it the duty of every importer and manufacturer of any preparation for the alleviation or cure of human ailments to furnish the Bureau of Science with a specimen of the preparation as it is to be exhibited for sale, for analysis for verification of formula, and if the formula is found to be false so as to be liable to mislead and cause injury, it thereafter becomes unlawful to have possession of such preparation except for reëxportation within such period of time as the Director of Science may designate. The administrative regulations for the interpretation and enforcement of this Act were revised to correspond with the amendment of the law.

The following administrative decisions under the Food and Drugs Act were issued:

No. 169.—Defining and fixing standards for edible vegetable fats and oils.
No. 170.—Defining and fixing standards for sweetened condensed milk, condensed skimmed milk, sweetened condensed skimmed milk, dried milk, dried skimmed milk, and malted milk.
No. 170–*a*.—Defining and fixing standard for tiqui-tiqui extract.
No. 170–*b*.—Prohibiting the sale or offering for sale of all forms of Sanki except the seed and seed pods of Illicium Anisatum.
No. 171.—Defining and fixing standards for macaroni, spaghetti, and vermicelli.

Also a standard was adopted for Philippine salt.

Twelve newspaper advertisements of patent medicines were approved and 39 rejected or required to be amended; various handbills, pamphlets, and advertising matter accompanying packages of patent medicines were passed upon; and a thorough survey made of imported and domestic remedies with reference to whether they comply with the requirements of Act No. 2342 as amended by Act No. 2680, and their importation and sale prohibited until they do comply.

Thirty-five proposed trade-marks for food or drug products were submitted, of which 13 were found to meet the requirements of law and 22 required amendment.

Fines were imposed by the court for violations of the Food and Drugs Act as follows:

Tinto dulce adulterated with saccharin	₱100
Dilute acetic acid labeled "Table Sauce-Vinagre superior y deliciosa;" quantity not stated	30
Coffee-chicory, label exaggerated as to quality and flavor of product, net weight not expressed in metric system	10
Lemonade and sarsaparilla, adulterated with saccharin, no statement of quantity, put up in bottle bearing name of another manufacturer	50
Chocolate, peanut and sugar, misbranded and adulterated	30
Dilute acetic acid, artificially colored, sold as "Vinagre Especial"	20
Vinegar, acetic acid 2.8 per cent (standard 4.0 per cent), kind of vinegar not stated on the label, dirty	30
Total	₱270

In many instances analyses of candies and soft drinks showed that nonpermitted coal-tar colors were being used in their manufacture. Investigation of these cases usually showed that the colors used were purchased from local importers under labels indicating that they were vegetable or permitted mineral food colors. To correct this evil it was announced in the Philippine Health Service Daily Bulletin that persons apprehended using prohibited coloring materials in food products would be prosecuted; that the Bureau of Science would analyze colors for use in the manufacture of food products, for a nominal sum; and that persons using coloring material which has not been analyzed do so at their own risk. Also as many manufacturers stated that they could not obtain permitted food colors in the local market, this Service prepared itself to furnish to applicants a list of manufacturers of permitted food colors in the United States.

A complete survey was made of the chocolate and chocolate mixtures and vinegar of domestic manufacture, and steps taken to secure correct labeling of these products and to prevent the watering of vinegar and the sale as vinegar of dilute acetic acid.

The matter of the sale of watered milk in the provinces, and of greater precautions as to cleanliness on the part of dairies selling milk in Manila and of aerated water factories was taken up, also the proper labeling of soft drinks.

Enforcement of the requirement that all food packages shall bear a statement of the quantity of their contents still demands considerable attention.

PROVINCIAL CEMETERIES.

Considerable activity and improvement were noticeable in this branch of the service during the year 1917, as is shown below. Only 67 cemeteries were reported as being in an insanitary condition in 1917, against 124 during 1916. On the other hand, 98 cemeteries were reported as being in good sanitary condition during the year covered by this report, against 44 of the year 1916. Of the 67 cemeteries reported as being in an insanitary condition, 43 complied with the rules and regulations of this office regarding cemeteries by the end of the year.

The following table shows the various activities during the year 1917 as compared with the previous year.

	1916	1917
New cemeteries approved	65	75
Old cemeteries approved	8	33
Old cemeteries reopened	15	21
Cemeteries reported as being in good condition	44	98
Cemeteries reported as having complied with the cemetery rules and regulations at the request of this office	56	43
Number of cemeteries in good sanitary condition at the end of the year	188	270
Old cemeteries closed	35	45
Extensions of time granted	124	73
Enlargements approved	13	13
Proposed new cemeteries disapproved	4	7
Cemeteries reported as being insanitary	124	67

HOSPITAL DIVISION.

The hospitals supported by provincial funds continue to awaken the interest and the enthusiasm of the authorities and inhabitants of each province. In spite of the high cost, both of building materials and of equipment and instruments, the provincial boards persevere in their endeavors to build a hospital in each province. Albay has commenced work on its hospital; Bohol, Pampanga, and other provinces have hospital projects under consideration.

By Act No. 2725 of the last Legislature, the Southern Islands Hospital in Cebu was separated from the Philippine Health Service effective on January 1, 1918, and placed under the control of the General Hospital in Manila. There are now under the control of the Health Service and supported by Insular funds the hospitals of San Lazaro and Bilibid in Manila; Bontoc, Baguio, and Kiangan hospitals in the Mountain Province; Bayombong hospital in Nueva Vizcaya; and the hospitals organized by the Health Service in the Department of Mindanao and Sulu. The hospitals supported by provincial funds and in regular operation at present are those at Naga, Ambos Camarines, and Tacloban, Leyte.

BILIBID HOSPITAL.

Bilibid Prison is divided into two sections: one for prisoners with short sentences, nonbailable, awaiting the action of the courts, etc.; the other containing the long-term men, corresponding to a penitentiary proper. The second section contains the industrial shops, including machine shop, carpenter shop, furniture making, bamboo manufacture, and the making of other useful articles. Laces, embroideries, etc., are made in the women's section.

The admission to the hospital, which is for all classes of prisoners, is very large.

The hospital consists of four large wards, a woman's section, two large spaces on the roof, operating, sterilizing and dressing rooms, laboratory and dispensary, a large space for contagious and isolation cases, an out clinic, and a quarantine for all prisoners admitted.

The personnel is as follows:

One chief.
One assistant chief.
One sanitary inspector.
One surgical nurse.
One nurse, women's section.
Three hospital attendants.
One pharmacist.

All other sanitation and hospital work is performed by experienced prisoners, including:

Office force.
Dressing-room force.
Surgical-ward force.
Medical-war force.
Chronic or convalescent ward force.
Women's-ward force.
Contagious-department force.
Quarantine force.
General-dissinfecting force.

During the year the chief of the hospital, D. J. W. Smith, retired from the Government service and was succeeded by Dr. C. E. Norris. The hospital attendants were all newly appointed during the year.

The laboratory has been in operation since 1909, the work being performed by competent prisoners, under the supervision of the chief and assistant chief of the hospital, and consisting of stool, urine, and sputum examination of all new arrivals, and when necessary of old prisoners; blood examination for filaria, of all new arrivals; leucocyte counts when necessary for diagnostic purposes; and gastric analyses. Examinations of specimens for cholera and diphtheria, and Widal and Wasserman reactions are performed at the Bureau of Science.

During the year there were no deaths from cholera. However, 94 persons were reported by the Bureau of Science as cholera carriers. Since December, 1916, cholera carriers have been kept in quarantine until 90 days have elapsed since cholera vibrios have been present in their stools.

In December, 1916, there were 104 positive cholera carriers under observation in the contagious department; in January, 1917, 94; February, 52; March, 35; April, 38; May, 31; June, 7; July, 5; August, 13; September, 39. During October, November, and December no carriers were reported, and those then in quarantine, having completed the ninety-day period since cholera vibrios were found in their stools, have been released. This period of quarantine appears to eliminate the cholera vibrio from the intestinal tract with little or no treatment, and not a single person who has passed through this quarantine period has returned as a positive cholera carrier. Ninety-four persons were found positive for cholera vibrio during the year, of whom 6 became positive a second, third, or more times while quarantined in the contagious department.

A very interesting case occurred in prisoner 7945, an American Negro. His stool showed cholera vibrio the first time August 8, 1916, then eight negative cultures were found and on September 2, 1916, he was released from the contagious section. September 22, 1916, his stool again showed cholera vibrio, followed by seventeen negative stool specimens, and on October 25, 1916, he was again released from the contagious department. On December 2, 1916, his stool again showed cholera vibrio and he was a third time placed in the contagious section, and two days later his stool showed cholera vibrio. Eight negative cultures were obtained and on January 4, 1917, his stool showed nonagglutinable vibrios, then two negative cultures were found and on January 12, 1917, nonagglutinable vibrios were present, one negative was reported, and January 15 positive again for nonagglutinable, then a negative stool and another positive nonagglutinable January 20, January 22 his stool showed true cholera vibrio, then a negative, and again nonagglutinable vibrios January 27, 1917, eight negative stools were then reported, and on February 17 his stool showed cholera vibrio, one more negative stool was reported, and February 23, 1917, his stool showed cholera vibrio, another negative, and February 27, 1917, nonagglutinable vibrios, eleven negative stools were then reported, and March 27 true cholera vibrio was again found, three negatives occurred, and nonagglutinable appeared on April 4, then six negatives, and true cholera vibrio was reported again on April 30, 1917, then three negatives occurred, and May 7 nonagglutinable vibrio was reported, then sixteen negative stools were reported, when on June 16, 1917, the prisoner was pardoned. The above shows that two, three, four, or more stools are not sufficient in all cases to show that the prisoner is no longer a carrier of the vibrio, after once having been found positive.

Routine cholera cultures are taken throughout the prison, of all those with six or more months' residence, one tube every two weeks; those with less than six months' residence, also hospital patients and servants, one culture every week. In case a brigade or department became infected, cultures were taken daily until declared clean, thus no industrial shops or works were taken daily until declared clean, thus no industrial shops or works were closed or quarantined on account of a cholera carrier having been found. Prisoners in quarantine known to be cholera carriers, together with prisoners known to be carriers of nonagglutinable vibrios, had cultures taken three times a week.

July 28, 1917, arrangement was completed with the Bureau of Science so that a special culture for cholera vibrio could be taken on the second and sixth days of the quarantine period of all newly arriving prisoners; this culture was prepared from the feces after purgation. The results obtained from fecal cultures after purgation show that this method is superior to anal swabbing. Ninety-two per cent of all nonagglutinable vibrio carriers and 83 per cent of all positive cholera vibrio carriers were found in these fecal cultures.

Persons positive for cholera vibrio usually repeated in about 42 days.

Many persons are found positive for a vibrio in the intestinal tract closely resembling the true cholera vibrio but nonagglutinable with true cholera vibrio serum. A list of nonagglutinable vibrio carriers was prepared. Prisoners showing nonagglutinable vibrios were not placed in the contagious department. One hundred and seventy-two prisoners were found positive carriers of nonagglutinable vibrios, of whom 14 or 8.14 per cent became positive cholera carriers later. The shortest time for any of these to develop true cholera vibrio was 3 days, the longest 42 days, and the average 20 days. The average period of observation for nonagglutinable carriers was 51 days, with a stool examination three times a week. The period of observation for these carriers after their stools ceased to contain vibrios was seven weeks. Positive cholera vibrio carriers were observed for ninety days.

The average time for true cholera vibrio carriers to repeat, according to the records for 1916 and 1917, was 42 days, for nonagglutinable vibrio carriers, 22 days.

It would appear from observation and study that examination of the stools of persons found positive for nonagglutinable vibrio is a valuable means to catch positive cholera carriers.

It appears to be a reasonable assumption that some place in the intestinal tract or its appendages is a reservoir for these vibrios, as the gall bladder, the pancreas, a large appendix, the valvula conniventes or Peyer's patches or the glands of the large intestine, though our experience with urotropine, salol, aromatic dilute sulphuric acid, calomel, calomel and adrenalin, calomel and fluid extract of ergot, and sodium cocodylate to disinfect or kill out such focus or foci does not appear to bear out this idea, as no good result was obtained from any of these medicines. Dilute aromatic sulphuric acid is the only medication being used at present and it is being used throughout the entire prison.

When the 24-hour cholera report of the Philippine Health Service showed that a province from which new prisoners were received was badly infected, they were given special attention on arrival; they were examined physically, their previous history was investigated, and cultures for nonagglutinable vibrio and true cholera vibrio were taken as soon as possible and thereafter until the end of the quarantine period, which was from 15 days to such time as was considered necessary.

A culture was taken every ten days of all prisoners (about 3,000) for cholera vibrio, and at various times special cultures for the nonagglutinable vibrio.

The prison has been free from cholera cases during the year.

When a person was found positive for nonagglutinable vibrio he was placed on a list and periodic cultures were taken. If he became positive for true cholera vibrio it usually developed in 42 days; he was then placed in quarantine in the contagious department. Some cases would be positive one, two, three, or four or more times at repeated periodic cultures. Usually if they became positive again it was within about 22 days; if not positive the culture would be nonagglutinable, which would indicate that the person was returning to his normal condition free from vibrio.

It would appear that first a person is positive for nonagglutinable vibrio, later becoming positive for true cholera vibrio, then if conditions are favorable, later on a case of cholera develops, though as no cases of cholera developed in the prison during the year, it is impossible to state whether such a cycle is true, but persons who were positive for true cholera vibrio nearly all became nonagglutinable before being released from quarantine, and about 22 days after becoming true cholera carriers, then followed a period in which the person showed nonagglutinable vibrios, later becoming negative for any vibrio. During the year not a single person has returned positive for true cholera vibrio and but one person has returned positive for nonagglutinable vibrio.

TYPHOID.

One case of typhoid occurred during the year. This prisoner gave his address as San Pedro Macati, entered the prison April 28, 1917, entered the hospital September 4, and died October 12. He had been assigned to duty in the general kitchen. It seems reasonable to presume that this prisoner had the infection in his system at the time of his entrance to Bilibid, as his was the only case that developed, though repeated culture have been taken for typhoid carriers, and none have been found. No antityphoid prophylactic vaccination has been performed.

LEPROSY.

Three cases of leprosy were found during the year. One was found on admission to prison in January. The second was admitted February 1, 1917, and transferred to San Lazaro Hospital as a leper April 15. The third was admitted January 11, 1911, and transferred to San Lazaro Hospital July 11, 1917.

TUBERCULOSIS.

All types and varieties of tuberculosis are found. The sick rate from tuberculosis among new arrivals was 26.70 per thousand, while 4.80 per thousand died. The highest tuberculosis rate was found among old prisoners returning to Bilibid from outside stations, 205.50 per thousand, while 39.90 per thousand died. Old prisoners remaining in Bilibid show a sick rate from tuberculosis of 6.70 per thousand, while only 4.40 per thousand died. About 125 females, or 23 per cent, show some kind of tubercular infection. At present there are 15 female patients in the hospital, five of whom have tuberculosis. Forty-two males are in the tubercular ward, which includes only those whose sputum contains bacilli. The death rate of Bilibid was 12.30 per thousand for the year, of which 6.70 per thousand was from tuberculosis.

DENGUE.

Fifty-seven cases of dengue occurred during the year. These cases presented a typical clinical picture and are readily diagnosed after a little experience. Nothing unusual or abnormal could be demonstrated in the blood of these patients. The cases are always placed in isolation, no epidemic occurred, the cases were sporadic, and only the usual precautions of isolation were observed. The case is usually ushered in with fever and chilliness, may be rapid in developing, headache, muscular soreness, heavy coated tongue, very little or no choryza, mucous membrane of mouth and eyes appears normal. The flexor surface of the arms often shows a slight red macular or maculopapular eruption, which spreads over the body from the arms to the chest and abdomen; in 72 hours it is very intense, covering the body, and appears as a fine red-millet-seed eruption, easily felt by passing the hand over it. It disappears first from the arms. The face and hands do not present much eruption, it being most intense upon the anterior of the abdomen and chest. The skin itches as the eruption is disappearing. Little or no desquamation has been observed. Glandular enlargement resembling syphilitic adenitis is often present. Quinine does not suffice as a prophylactic. A case lasts about 7 to 10 days.

FILARIASIS.

For four years every prisoner entering Bilibid Prison was examined for filaria, 967 being found positive.

In 1912 a separate cell house or brigade was set apart for housing at night all prisoners found positive for filaria. These prisoners were furnished with mosquito bars, as the mosquito is believed to be the means by which filaria is transmitted. When the present chief took charge of the sanitation of Bilibid Prison there was a cell house or brigade known as the filaria brigade, containing about 250 men, overcrowded. The Director of Health appointed a committee to study and investigate the filaria problem, and upon the basis of their report the segregation of known filaria cases was abandoned. The committee was unable to say that this filaria was Micro-filaria Bancrofti. It resembled it in some points, but it appears smaller, is clear and contains less body structure. The committee was unable to say whether or not this filaria is transmitted by a mosquito. It has been reported that it is transmitted by the culex fatigans. The 967 persons found positive during the four years of the examination presented little or no clinical symptoms and never knew they had such infection until told. They presented no fever or glandular or lymphatic enlargement. In the periodical medical surveys of the prison, which included a reëxamination for filaria, not a single case of new filaria was ever found. It may be stated that if filaria is transmitted by a mosquito, the particular species capable of transmitting it is not present in the vicinity of Bilibid Prison, for if it were present it would appear that now cases would have occurred in the prison in the four years of examination of the prisoners, especially as the mosquito bars are often is bad condition and the prisoners sometimes fail to use them. Furthermore, the persons found positive for filaria were first confined in quarantine for fifteen days, where no attempt was made to use mosquito bars, also it was often necessary to place filaria cases in the contagious department, where the screening and mosquito bars were very ineffective. Of the 967 cases found, 932 were nocturnal and 35 both nocturnal and diurnal. Twenty-four of these were found to have hydroceles, which were operated on in the Bilibid hospital. In two of these cases the filaria was demonstrated in the milky scrotal fluid. Twenty-two of the 24 hydroceles gave their occupation as hemp strippers. The majority of these cases came from high altitudes. Eight cases came from China.

YAWS.

Seven cases of yaws were diagnosed during the year. A mother and an eighteen months baby, both diagnosed clinically as yaws, with positive Wasserman reaction, arrived in the prison from the province of Leyte. The mother did not show much skin eruption but the baby presented 27 large moist elevated patches on the body and face, condylomatous in appearance, varying in size from a peseta to a peso, while the forehead was a solid eruptive mass. The second toe on the baby's right foot presented a deep bone lesion. These two cases were treated with Neusalvarsan. Other cases that presented a dry, hard black skin eruption over the neck, buttock, and arms have responded fairly satisfactorily to large hypodermic injections of cocodylate of soda. They have been under treatment for three months; the eruption is gradually disappearing.

SKIN DISEASES.

The recent general medical survey of the prison included 2,359 persons, of whom 1,162 or 49 per cent showed skin disease of some kind, this being the highest number of cases represented by any one disease. The majority of the cases were tinia imbricata, tinia circinata, eczema, and scabies, though a few cases of ecthyna, psoriasis and zoster have occurred. Seventy-three per cent of the new arrivals presented some kind of abnormality of the skin. Many responded to treatment nicely and by the end of their quarantine period were entirely well. The skin diseases of the old prisoners do not respond to treatment so readily. The dhobie itch of the tropics is usually tinia imbricata, circinata or eczema, which respond to ordinary treatment quite satisfactorily if intelligently used and applied according to instructions, the trouble in these cases being that while the clinical symptoms are present the patient uses the medicine earnestly, but as soon as these manifestations have subsided the treatment is suspended and in a short time the trouble returns. Of all these troubles the eczematous ones are the most difficult to handle. They seem to return in spite of all treatment. A diligent effort has been inaugurated to eliminate skin troubles from the prison. Treatment was administered to men slightly affected and severe cases were placed in the contagious department until cured. Good results have been obtained.

SORE MOUTH.

In the general examination of the 2,359 prisoners, 273 showed some abnormal condition of the mouth, such as the corners cracked and bleeding, the mucous membrane white with teeth imprints, breath foul, tongue heavily coated with teeth imprints along the edges. Experience leads to the belief that such conditions are associated with filthy, acid-reacting intestinal tract. Simple medication along lines indicated was all that was necessary to put these prisoners' mouths in good, clean condition. Two hundred and ninety-four were given treatment for filthy teeth and gums; 55 received eye treatment.

AMOEBIASIS.

Dysentery of the amoebic type is present in the prison. Two general surveys were made during the year. The first, in April and May, showed 66 prisoners with amoeba coli and 62 with amoeba histolytica. These cases were all treated and pronounced free from amoeba. In the second general survey 13 cases of amoeba histolytica were again found, 3 of which were among those found in the previous survey. One of these has been positive for amoeba for six years and another for seven years, according to the hospital record, having resisted all kinds of treatment. The majority of these cases do not complain of much physical discomfort, probably the most common complaint being discomfort of the abdomen. Diarrhoea and constipation alternate, neither being serious, but enough to cause discomfort; there is pain in the abdomen, not localized; and the stomach is distended, full of gas, which produces an uneasy feeling. The treatment has been oil of chenopodium and chloroform, followed by hypodermic injections of emetine, with soda sulphate as a purge. This treatment is generally satisfactory but a certain per cent of the hystolitica return positive.

INTESTINAL PARASITES.

A long time ago a rule was adopted that every person entering quarantine should receive certain routine examinations, including blood for filaria, stool for intestinal parasites, and urine for abnormal elements. At first but one stool examination was made. If found negative for parasites, the man was released when the quarantine period ended. As it was found that a certain per cent were positive at a later stool examination, it was thought best to extend the work to two stool examinations. This being found insufficient, a three-stool examination plan was adopted. The examination on arrival shows about 52 per cent containing intestinal parasites. The negative ones are given a second examination, which produces about 10 per cent positive. The remaining negative are given a third stool examination, which produces about 3 per cent positive. Thus it will be seen that about 58 per cent of all arrivals show intestinal parasites. The last general medical survey showed that about 0.5 per cent of the cases of intestinal parasites were not being detected in quarantine and were being admitted to the prison proper, and in this way this infection has probably continued. Females admitted to the prison show about 20 per cent greater infection of intestinal parasites than do the men.

OTHER DISEASES.

Pneumonia, bronchitis, asthma, rheumatism, and venereal troubles all required attention. The prison has been free from variola, diphtheria, measles, whooping cough, scarlet fever, malaria, etc.

PRISON DISINFECTION.

Steam heat is used to disinfect everything possible, such as parts of the bed, chairs, etc. Articles too large to go in the steam chamber or which would be soiled by high steam heat are gone over carefully with a blow torch. Bedding, blankets, mosquito bars, etc., are dipped and soaked in tanks of liquor cresol compound solution. Cell houses or brigades are washed down, scrubbed and disinfected from roof to floor periodically. The work of disinfecting the cell houses is done by about 45 Chinese laborers under the supervision of a sanitary inspector.

SICK AND DEATH RATES.

The sick and death rates per thousand are, respectively: for all new arrivals, 164.10 and 8; for old prisoners returned to Bilibid from outside stations, 287.10 and 41.90; for old prisoners remaining in Bilibid, 41.2 and 8.40.

WOMEN AND BABIES.

One hundred and thirteen women was the daily average for the year, 20 being in the hospital. Twenty-one women with 24 children passed through Bilibid during the year. Seventeen of the children were admitted to the hospital. Five males and 2 females were born in the prison hospital, and one stillbirth (female) and 4 abortions occurred.

OUT-PATIENT DEPARTMENT.

During the year an out-patient department was established.

SAN LAZARO HOSPITAL.

The chief of the hospital, Senior Medical Inspector Almon P. Goff, left on leave of absence November 10, since which date Senior Medical Inspector W. K. Beatty has been acting chief.

Patients in hospital January 1, 1917		542
Admitted during the year:		
Insane	433	
Lepers	329	
Tuberculosis	715	
Varioloid	217	
Cholera	88	
Cholera carriers	158	
Mumps	77	
Aged and infirm	45	
Scabies	48	
Children	2	
Diphtheria	141	
Tetanus	63	
Typhoid fever	42	
Hookworm	87	
Measles	232	
Observation	69	
Miscellaneous	74	
Total		2,820
Total		3,362

Discharged	1,904	
Transferred	308	
Escaped	24	
Died	451	
Total leaving hospital		2,687
Remaining in hospital, December 31, 1917		675

The average number of persons subsisted per day was 740 and the average daily cost of subsistence was ₱0.372. These figures by months were as follows:

	Number.	Amount Per dey.
January	655	₱0.325
February	704	.36
March	739	.36
April	7[illegible]3	.361
May	796	.339
June	656	.387
July	685	.357
August	730	.373
September	752	.372
October	779	.391
November	810	.414
December	811	.426

During the year the following new buildings were erected:

New ward for cases of tuberculosis, erected by the Philippine Health Service, costing about ₱22,000, capacity about 120 patients.

New ward for aged and infirm, erected by the Bureau of Public Works, cost ₱10,000, capacity 46 patients.

Model house exhibited at the 1917 Carnival moved to San Lazaro for use as quarters for male nurses.

Construction work has been commenced on concrete building for use as a ward for female insane.

The erection of an additional building for the housing of old people and persons wholly incapacitated to earn a living, through physical defects, is also recommended, as the present building will accommodate only 46 patients.

SOUTHERN ISLANDS HOSPITAL.

GENERAL.

During the year there have been admitted to the hospital 1,029 patients and 303 patients to the contagious department, of which 223 were cholera carriers, the other 80 patients treated in this department were suffering from contagious and communicable diseases, such as smallpox, varioloid, measles, diphtheria, cholera, leprosy, yaws, and erysipelas. The 16 lepers admitted, who presented themselves for treatment, were transferred to the provincial leper hospital for final disposition of the health authority, of which one escaped during the course of treatment in the hospital. Out of 44 cases of positive Asiatic cholera, 17 have recovered.

There was an increase of 61 per cent in the total number of patients admitted to the hospital compared with that of the previous year; an increase of 34 per cent in the total number of free dispensary patients over 1916; 27 per cent in the number of cases and 59 per cent in the number of prescriptions filled. There was an increase of 18 per cent in the number of operations performed in the out clinic department over the previous year, and 33 percent increase in the hospital operations. Three hundred and forty-nine operations were performed in the hospital, of which 135 were major operations of all descriptions. The average number of visits by out patients per day was 120 while in the previous year it was 71. This considerable increase of out-patients, prescriptions filled and operations performed was due to the fact that the people realized the benefit derived from the institution.

Owing to the constant increase of prices, a considerable increase of office work has been observed. Financial and property works have received a large amount of attention in order to exercise economy in all the departments. The disbursement of funds appropriated for the construction of the kitchen, laundry, and morgue buildings, which were begun in the latter part of the year, was added to the responsibilities of the superintendedt.

FINANCE.

The allotment of ₱23,760 for the consumption of supplies and materials during the year was exceeded by ₱4,473.96. This deficit was due partly to the increased activity of the hospital and partly to the increased number of hospital patients and out-patients. Practically the total expenditure of ₱28,233.96 in the consumption of supplies and materials, compared with ₱24,683.95 for the previous year, is very slight considering the exorbitant prices of all articles in the market.

As there was no allotment for the acquisition of fixed assets and for the printing and binding of hospital documents, the financial statement of the hospital shows a deficit of ₱1,603.97 for equipment acquired and ₱28 for the binding of hospital records.

The deficit of ₱4,657.68 disappears if we consider the supplies remaining in the storerooms of the hospital on December 31, 1917, namely:

Drugs	₱6,585.71
Subsistence supplies	2,314.62
Miscellaneous supplies	855.00
Total	9,755.33

MALARIA.

During the period from August to October, 1917, there were 19 cases of malaria treated in the hospital, of which 10 were primary and 9 developed in the hospital. Measures have been taken to prevent the development of this disease among the hospital patients.

The treatment recommended by Ochner of administering quinine in small doses combined with arsenious acid pills at intervals was tried and found successful. The only objection to this treatment is that the patient becomes deaf for a week.

TETANUS.

A tetanus case was admitted to the hospital in a serious condition. The use of antitetanic serum in different ways as recommended has been found unsuccessful in previous cases once the symptoms are manifested. The intravenous injection of a 10 per cent solution of magnesium sulphate 50 c. c. twice a day proved to be effective, and the patient has recovered. This treatment was read in the American Medical Journal.

ASCARIS AND HOOKWORM.

Oil of chenopodium was tried for the treatment of intestinal parasites. Its action was found to be lower than santonin and thymol. The patient has to submit to at least three consecutive treatments before a satisfactory result is obtained.

CONSTRUCTION OF KITCHEN, ETC.

Act No. 2704 provides for the construction of permanent kitchen, laundry, and morgue buildings and the completion of dispensary building of this hospital. Plans and specifications have been prepared, and the work begun in the latter part of the year.

ALTERATIONS AND REPAIRS.

Considerable repairs have been made to the hospital building, porches, roofs, gutters and downspouts and to furniture and equipment. Windows were constructed in the porch of Ward II, which has become Ward V and can accommodate ten patients.

CHANGES IN STAFF.

The chief of the hospital, Dr. Arlington Pond, was on vacation leave in the United States from March 31.

Dr. F. R. Wenderlich, dental surgeon of the U. S. Army Medical Corps, who was in charge of the dental clinic from April 2, resigned on June 23, on account of transfer to another station.

District physician Dr. Catalino Gavino was detailed as acting intern from January 17 to February 13.

District physician Dr. Estanislao Hernandez was detailed as acting intern from June 2 to June 9.

District physician Dr. Lucio San Diego was detailed as acting intern from May 5 to May 17.

Intern Dr. Virgilio R. Gonzalez resigned October 5.

Dr. Severo Cosca was appointed intern June 8.

Dr. Vicente Lopez was appointed intern October 19; resigned December 21.

Miss Angustia Siokon, nurse, class I, resigned January 3.

Miss Olimpia Lumen, nurse, class I, resigned February 27.

Miss Anastacia Raval, nurse, class I, resigned July 31.

RECOMMENDATIONS OF THE CHIEF OF HOSPITAL.

Personnel.—One additional clerk to take charge of the property; two additional helpers, one for night duty and one for dispensary work.

Building.—Construction of nurses' dormitory and adequate service building.

Ambulance.—Ambulance service for the hospital.

CULION LEPER COLONY.

In general, the year has been one of comparative inactivity from the standpoint of permanent forward progress, on account of lack of funds for improvements.

CONSTRUCTION.

Funds not being available for expenditure until six months of the year had passed, work was necessarily delayed; the amount of money appropriated being but ₱10,000, little new construction could be accomplished.

Chief's house.—This building was not started until July 17, although the project had been authorized for nearly five years, more important projects having been given precedence. It is being made entirely of ipil and cement, is of the new "model house" style of architecture, and promises to be the most handsome structure in Culion. It contains two bed rooms, each with bath, one sala and dining room combined, kitchen and storeroom, surrounded by a wide veranda. The house is located on the hillside above Balala and adjoins the Sisters' house. It is anticipated that the house will be ready for occupancy about March 15, 1918. This represents all of the permanent construction in Balala.

Leper club house.—Funds not being available for the construction of a clubhouse for the lepers from the Government appropriations, the lepers collected sufficient money among themselves to build this much-needed building. All of the labor is being performed by leper carpenters under the supervision of a nonleper carpenter. This building, which also is of the "model house" plan, will contain one large assembly room, one library and one reading room, being surrounded on all sides by a wide veranda. The club will be formally opened about the middle of March, 1918.

Although there were no funds available for the repair or construction of the nipa houses belonging to the lepers, there has been considerable activity along these lines by the lepers.

During the year 84 houses were repaired, 62 houses were rebuilt to conform to the standard of a 5-meter clearance on each side, and 22 houses were condemned and torn down. No new houses were built in the colony proper, the space being already overcrowded. Such assistance as could be given from labor paid from the "gratuity fund" was given the house owners who were compelled to conform to the new standard. In each instances, when the owner understood why he must change, the necessary alterations were made cheerfully.

The valley below the incinerating plant in which a "sanitary barrio" had been established to furnish building space for those whose houses were condemned and others who desired new homes was roughly surveyed into building lots so that each house would be required to conform to the standards of position, size and elevation, four houses constituting a "city block." The builders have coöperated with the authorities and a truly model settlement is now well under way. Graded streets have been nearly finished, acacia and coconut trees have been planted at regular intervals and combined with the home gardens that nearly every house owner has started.

One combined toilet and laundry has been about completed. Two more will be added as they may be needed. The toilets are of the "model house" plan.

In the barrio, 39 nipa houses have been finished and 26 are under construction.

Model house.—In order to encourage the construction of fireproof houses, a model house has been constructed on the water front of the colony near the old presidencia. So far none of the lepers have started similar houses. It is anticipated that in the coming year at least three will be constructed.

In addition to the model house, five better-class nipa houses have been constructed along the water front between Balala and the old "Spanish house."

MAINTENANCE.

The small amount available for maintenance and repairs was hopelessly inadequate to care for the institution, and as an even smaller fund was available in 1916, the buildings have deteriorated and some which might have been repaired two or three years ago have gone beyond the stage of possible repair and have been condemned and torn down as being unsafe. A small amount of relatively inexpensive work, such as painting and repairing of roofs, plumbing, etc., has been performed.

The engine in the launch *Culion* was out of commission during the entire year. A new "V-bottom" launch is being made.

The lighter formerly used for hauling construction materials having been destroyed in 1916 and no funds being available for the purchase of a substitute, it was necessary to borrow the towboat of Mr. Whalen. This boat was lost in a heavy sea with a load of lumber. To compensate Mr. Whalen for this loss the launch hull *Shamrock* was loaned him, the engine formerly in the *Shamrock* being placed in the launch *Culion.*

GENERAL ADMINISTRATION.

Leper farming.—Due to the irregular steamer connections with Cuyo, the lepers have failed to receive the large amounts of fresh vegetables which formerly came from this port. This has served as a stimulus to cause them to grow their own vegetables, so that a gradually increasing number of farmers are taking up plots of land; those who have been farming are increasing the size of their crops. Several new farming centers have been established. The Government continues to purchase any vegetables the farmers produce and issue them as part of the general ration.

Social service.—During the greater part of the year a nonleper graduate nurses has been making the rounds of the colony with two leper nurses, visiting the sick, bandaging the wounded and giving simple talks to the patients with the hope of improving the social condition of the lepers. Owing to a shortage of nurses in the childrens' house, the graduate nurse's work was discontinued during the latter part of the year, the two leper nurses continuing their rounds.

Dental clinic.—There was some decrease in the number of patients treated by the dentist.

Chaulmoogra clinic.—The enthusiasm for treatment with injections of the chaulmoogra oil formula, which was very high among the lepers a few years ago, has gradually decreased, yet nearly 900 injections are given weekly.

Bacteriological examinations.—Of lepers examined during the year to determine whether they have become bacteriologically negative, all were positive after one or more examinations except 17, 6 of these being already in the "negative house." The remaining 11 will be under observation in the colony for a further short period before final examination for entrance to the "negative house."

Children's house.—During the year Miss Jacinta Acena, matron of the house, and Miss Anastacia Español, assistant nurse, were transferred to other stations, Miss Victoria Taal being placed in charge, and Miss Olympia Lumen being employed to take Miss Español's place. Nine of the children in the house died during the year and 8 were returned to the colony as lepers; 29 remain, which number will shortly be again increased.

Medical staff.—In May Dr. Wm. P. Burns was transferred to another station, due to ill health of his wife. In August his successor, Dr. Santiago Icasiano, arrived. For nearly four months there was but one physician in the colony.

Research.—Comparatively little time has been available for research in the past year. In the December 29, 1917, issue of the Journal of the American Medical Association appeared an article by the chief of the colony entitled "Leprosy in the Philippine Islands, from a statistical study of the histories of ten thousand lepers," and an article is under preparation by him for publication in the Philippine Journal of Science entitled "A Photographic Study of Leprosy," in which the progressive stages of the two main types of the disease will be shown by photographs.

Visitors' boats.—There were two trips of visitors, on January 1 and December 25. This custom of bringing parents and friends of the lepers to Culion has done perhaps more than any other single thing to bring about a condition of contentment among the lepers, and to acquaint the people with the actual conditions in Culion, which should aid greatly in the future collection of lepers.

BAGUIO HOSPITAL.

There has been a great increase in the total number of patients treated in the hospital, particularly in the outdoor department. There has likewise been an increase in the number of Americans and Europeans treated, particularly during the months of March, April, May and June.

As there is likely to be a repetition in the increase of the above patients during the corresponding months of the coming year, it is believed that a medical assistant will be needed to satisfactorily carry on the work of this hospital, also two additional nurses will be needed.

The cost of food supplies, particularly the vegetables, has increased. If the regular gardener were given two laborers as assistants, the necessary vegetables could be raised at an expense far below their present cost.

The present beds are of wood and in a decaying condition and should be condemned and replaced with new ones.

As cases of pertussis, mumps, measles, etc., have recently been admitted, it is recommended that a building of about ten separate rooms be constructed on the hospital grounds to accommodate such contagious cases, which at present must be placed in ill-furnished tents which are not sufficient protection against the weather and are apt to conduce to complications in the above-named diseases.

A thorough inspection of all the schools around Baguio was made, particular attention being given to condition of the eyes, and it was found that 20 per cent of the persons examined suffered from mild catarrh of the conjunctiva which was believed to be noncontagious and due to insanitary conditions at home. These cases were treated and proper isolation carried out.

The market is operated in an orderly and sanitary manner and an additional market is under construction and will soon be completed.

As the situation of the hospital is somewhat isolated from the social activities of the city, it has been somewhat difficult for the nurses to enjoy any relaxation or exercise after their official duties, and the chief of the hospital repeats his request for an appropriation for the construction of a tennis lawn on the hospital grounds.

BAYOMBONG HOSPITAL.

During the year 377 patients were admitted to the hospital against 363 last year.

Of this number 310 were Christians, 65 non-Christians and 2 Japanese. The number of children was 81 and the number of deaths was 11.

More would have been admitted but, due to the small capacity of the building at present used as the hospital, many applicants had to be treated by the hospital staff at the homes of their friends.

Patients from different parts of the province have come seeking medical aid. At times the patients numbered 20 or more and some had to sleep on the floor and even in the kitchen. For this reason it is hoped that a hospital of greater capacity will be erected in the province in the near future.

The hospital has not only been a benefit and a blessing to the inhabitants of Nueva Vizcaya but it has been a place of welcome and relief to all travelers when ill.

BONTOC HOSPITAL.

During the year there were 610 admissions to the different clinics of the hospital, against 562 last year. Twenty-two deaths occurred.

Three thousand one hundred and fifteen patients attended the out-patient department during the year, receiving 10,544 treatments, not including prisoners treated in the provincial jail. Up to November 1 prisoners came to the hospital for treatment in the morning; since this date they have been treated at the jail at 5 p. m. Practically all patients, both in the clinics and in the out-patient department, were Igorots. On December 3 prisoner patients in the hospital were transferred to a room of the jail, where there are no facilities for their proper treatment. The hospital furnished medicines, medical supplies, etc., for these patients, and the chief of the hospital, in his capacity as district health officer, attended them, with the assistance of sanitary inspectors and nurses.

The lepers captured in the province are considered as patients and are isolated in a small house made of lumber with grass roof on the hospital grounds.

The repairs to the sewing system, stated in last year's report to be necessary, have not been carried out, except certain repairs to the flush closets, wash stands and other plumbing connection with the reservoir. The floor of the hospital should be cemented, an additional pavilion constructed for contagious diseases, and the walls of the operating room repaired.

For treatment of maternity cases a good obstetrical bed, Tarnier's forceps, and other equipment are needed.

In order that vegetable gardens may be established, the grounds should be fenced against the entrance of animals running at large at night, and garden implements supplied.

The illumination service of the hospital is very deficient and 4 hanging alcohol lamps and 3 "Mecanico" and 3 street lanterns should be added.

Quarantine of animals between Tagudin and Bontoc, delaying transportation, caused a shortage of commissaries in the latter part of the year. Fresh vegetables, pork, beef and canned stuffs were much higher in price than in previous years, yet the cost of subsistence of patients and employees was kept down to ₱0.35 per day, as compared with ₱0.41, ₱0.40, and ₱0.32 in 1914, 1915, and 1916, respectively.

CUYO HOSPITAL.

The hospital is housed in a temporary building rented by the Government from the parish priest of Cuyo. This building is inadequate for a hospital but was the best that could be found be found under the circumstances.

There were six beds available during the year; two for male patients, three for female patients, and one reserved for the attendant on duty at the hospital. This number of beds was sufficient.

One hundred and three patients were admitted during the year, 5 remained from last year, making a total of 108 patients treated in the hospital during the year. Of these, 95 were discharged recovered, 7 improved, 5 died, and 1 escaped. The death rate among patients treated was 4.8 per cent.

The most important diseases treated were: tuberculosis in all its forms, 20; malaria, 16; and intestinal parasites, 18. Tuberculosis seemed to be the most prevalent diseases in the community, with malaria next. Intestinal parasites also claimed their victims. No major operations were performed, due to lack of instruments and accessories therefor.

Subsistence.

Subsistence supplies:	
Purchased	₱1,034.88
Consumed	531.66
On hand at end of year	503.22
Average cost of subsistence per patient per day	0.27

INCOME.

From the hospital proper	₱139.95
From the dispensary	36.80
From outside calls	21.00
Total	197.75

Dr. Emilio Bulatao was chief of the hospital, being relieved during one month by Dr. Felino Simpao. The personnel at the end of the year consisted of 1 chief, 1 nurse, 1 helper, 1 cook, 1 laundress, 1 clerk, and 2 hospital boys.

Dispensary and outside service.

Patients treated	2,217
Dressings	892
Minor surgical operations	76
Prescriptions dispensed	1,096

A new hospital should be constructed. There have already been collected from voluntary contributions ₱1,635 and more will be collected soon. The present building is entirely inadequate to house the patients applying for treatment and needing hospital accommodations. If the construction of a hospital cannot be undertaken at present, the congestion can be partially remedied by the addition of more beds, increasing the number available for patients from 5 to at least 10.

IWAHIG PENAL COLONY.

The colony has a population of 1,278, including employees with their families and the families of some of the colonists. The colony has three pavilions used for hospital purposes with a capacity of 50 beds each. One of these pavilions contains the office, laboratory, dispensary, a small department for clinics, one for operations, an annex with room for the nurses, a morgue, kitchen and closet; another pavilion is used for tuberculosis patients; and the third is for women patients, with nurses' rooms, baths, kitchen and closets. Besides the above, there is a sanitarium for tuberculosis patients in the stations of Kiangan and Malinao where the advanced cases of the disease are sent.

SANITARY CONDITIONS.

The sanitary conditions, in general, are good, although some pools of stagnant water may be found here and there, due to the unevenness of the ground.

These stagnant waters are under continous surveillance, but notwithstanding that they are being drained and oiled, the number of mosquitoes has not been sufficiently diminished to prevent the prevalence of malaria in the colony.

WATER SUPPLY.

The water is piped to a tank from near-by springs which have their source in the foothills. It is of good quality and of sufficient quantity to supply the whole colony. When water is obtained from other sources, it is ordered to be boiled before being used, and during certain periods the spring water has also to be boiled. For this reason it is very rare to find diseases of gastrointestinal origin, except a few isolated cases where the colonists in the fields avail themselves of any water they find at hand.

CLOSETS.

Septic wells are used in the homes of some employees; the fly-proof pail system is used in the majority of houses and in the hospitals, and the Antipolo system is used in the houses of colonists living in the field.

DISPOSAL OF GARBAGE AND REFUSE.

All garbage and refuse are deposited in kerosene cans which are daily removed by wagons and dumped into the fields under cultivation.

CEMETERY.

The cemetery is in good condition; the path and transverse alleyways are planted with trees; it has a chapel, and the graves are each marked with a uniform wooden cross.

MARKETS AND SLAUGHTERHOUSES.

There is no market in the colony, as the colonists are provided from the Government commissary. There is a small slaughterhouse with a nipa roof and cement floor by the river. It is used once or twice a month for slaughtering cattle for the use of the colony.

PREVAILING DISEASES.

Malaria, in all of its forms, is the most prevalent disease in the colony. Tuberculosis accounts for a large number of cases, who are segregated in the tuberculosis hospitals. Labor accidents, as cuts and wounds by blunt instruments, amount to 46 to 48 per cent of the number of colonists each year. During the last two or three months of the year several cases of grippe, of a mild character, were registered.

LEYTE HOSPITAL.

There were 265 patients treated in Leyte Hospital during the year 1917, as against 93 in 1916. The following table shows the number of patients treated in 1917, by months:

Month.	Admitted.	Common ward.	Private room.	Free-ward room.	Recovered.	Died.	Remaining.
January	13	11	2	0	12	0	1
February	13	12	1	0	11	2	0
March	8	6	2	0	7	0	1
April	22	17	5	0	21	1	0
May	35	24	9	2	27	0	8
June	29	25	4	0	29	0	0
July	17	16	1	0	16	1	0
August	21	20	1	0	20	1	0
September	32	27	4	1	27	2	3
October	20	18	2	0	18	0	2
Novenber	35	23	11	1	22	1	2
December	20	18	2	0	17	1	2
Total	265	217	44	4	227	9	29

There were 121 medical cases, 93 surgical cases, 22 obstetrical cases, 6 major operations, 23 minor operations, 4 major dressings, and 120 minor dressings.

The number of people seeking admission has increased, but the hospital building cannot acomodate more, taking into consideration the lack of suitable accomodations for women and private patients. There are now 16 beds ready for occupancy. A 7-meter addition is to be constructed in the near future.

Personnel of the hospital and their salaries.

1 superintendent and resident physician	₱1,200
1 chief nurse	900
3 nurses (1 at ₱720, 2 at ₱360 each)	1,440
1 practicante	360
1 cook	180
1 washerman	144
4 boys (servants) at ₱10 each per month	480
1 property clerk	240
Total	4,944

All of these employees except the practicante are furnished subsistence and lodging.

Financial statement.

Month.	Receipts.	Expenses (not including salaries).
January	₱64.68	₱132.14
February	127.09	117.32
March	62.82	45.19
April	322.50	168.15
May	380.50	154.84
June	274.58	162.45
July	324.43	179.36
August	265.43	161.34
September	304.43	158.98
October	307.30	165.59
November	302.73	199.88
December	348.75	199.36
Total	3,085.04	1,844.60

RECOMMENDATIONS.

The chief of the hospital makes the following recommendations:

That a male nurse be detailed to the hospital in addition to the female nurses.

That servants' quarters be constructed.

That private practice by the resident physician be prohibited.

NAGA HOSPITAL.

The hospital was opened in October, 1914, and has been a success from the beginning. The number of cases admitted in 1917 was 981, an increase of 253 over the preceding year. The capacity of the hospital is now 26 beds and cannot be increased without an addition to the building.

Of the cases admitted 784 were medical and 197 surgical. The principal causes of admission were: intestinal parasites, 252; malaria, 200; dysentery, 22; tuberculosis, all forms, 59; rheumatism, 40; bronchitis, 15; whooping cough, 10; heart lesions, 11; beriberi, 5; typhoid, 10; appendicitis, 5. The stools of 90 per cent of all cases admitted showed intestinal parasites of some kind and between 40 and 45 per cent were positive for hookworm. There were 28 cases of obstetrics handled, 14 of which were normal, 2 breech presentations, 2 forceps deliveries, 2 by manipulation, 1 placenta previa, and 7 abortions or premature deliveries. There were 16 deaths during the year. Sixteen major and 77 minor operations were performed.

At the hospital dispensary there were 11,498 visits, 7,295 surgical and 4,203 medical. There was a daily average of 2 minor operations.

Personnel and salaries.

1 chief nurse	₱1,000
1 nurse	720
2 practicantes (1 at ₱480, 1 at ₱300)	780
1 student practicante	240
1 cook	240
1 janitor	180
1 gardener and cochero	180
3 servants at ₱12.50 per month each	450

The total expenditures for the year were ₱13,504.78, of which ₱2,132.38 were for repairs to building and installation of water system and flush closets. The average daily cost of subsistence per person, including patients and personnel, was 43 centavos. The hospital collected from patients ₱4,749.91.

Recommendations of the chief of the hospital.

An appropriation of ₱2,500 for the construction of nurses' quarters.

Additional personnel: one nurse, one practicante, and one servant.

REPORT OF THE DIVISION OF SANITATION, CITY OF MANILA.

[Dr. SALVADOR V. DEL ROSARIO, *Chief of Division.*]

DANGEROUS COMMUNICABLE DISEASES.

CHOLERA.

Cholera, with an incidence of 25 positive cases and a mortality of 8—a death rate of 32 per cent—during 1917 in the city of Manila can only be regarded as the end of the epidemic wave of 1916 which had its climax with 388 positive cases in September, 1916, as compared with *none* in September, 1917.

The distribution of cases and deaths throughout the year is shown in the following table:

Month.	Cases reported.	Cases found positive.	Deaths.
January	17	12	4
February	10	6	3
March	6	0	0
April	8	1	1
May	8	0	0
June	9	1	0
July	10	1	0
August	8	4	0
September	5	0	0
October	3	0	0
November	3	0	0
December	2	0	0
Total	89	25	8

The distribution by districts shows the following figures:

District.	Total cases reported.	Positive clinically and bacteriologically.		Positive clinically only.		Total found positive.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
No. 1, Intramuros	15	1	0	1	[a]1	2	1
No. 2, Meisic	21	2	0	3	1	5	1
No. 4, Sampaloc	23	3	0	3	1	6	1
No. 5, Tondo	26	4	2	5	2	9	4
No. 6, Paco	4	0	0	3	1	3	1
Total	89	10	2	15	6	25	8

[a] One case of December 4, 1916, died January 3, 1917.

Aside from the much reduced incidence and lower fatality of the cases observed during 1917, the attention of the reader is further drawn to the fact that, as shown in the above table, out of 25 cases found "positive" not less than 15 cases (60 per cent) were "positive" *clinically only,* whereas but 10 cases (40 per cent) were found "positive" both *clinically* and *bacteriologically.*

CHOLERA CARRIERS.

The anticarrier campaign, as is well known, has been the most successful means of bringing cholera under control in the city of Manila.

Accordingly, much effort and energy have been spent during 1917 in extensive surveys made in the infected or suspected area of all districts.

Following are two tables showing the extent to which the "vibrio-carrying condition" has prevailed in the city during 1917. The survey and preparation of the tables include not only the typical cholera vibrio, but also "nonagglutinable" strains which heretofore have been considered a negligible epidemiological factor.

Cholera carriers—Distribution by districts and collateral institutions.

District No. 1, Intramuros	16
District No. 2, Meisic	30
District No. 4, Sampaloc	28
District No. 5, Tondo	59
District No. 6, Paco	9
Bilibid Prison	96
Hawaiian Sugar Planter's Association	7
Total	245

Cholera carriers—Distribution by months.

January	23
February	24
March	1
April	17
May	7
June	8
July	1
August	37
September	91
October	17
November	1
December	18
Total	245

Other conditions regarding the cholera-carrying state, viz., the persistence of the vibrio in the feces of contacts and discharged patients from San Lazaro Hospital (convalescents and carriers) are shown fully in the following tables:

Persons never previously sick or recognized as carriers, from whom stool specimens were taken during the year 1917, by health districts, as directed by Circular 0—78.

Healt district.	First week.		Second week.		Third week.	
	Specimens.	Positive.	Specimens.	Positive.	Specimens.	Positive.
No. 1, Intramuros	450	0	401	0	392	0
No. 2, Meisic	161	0	809	7	86	0
No. 4, Sampaloc	728	1	728	4	728	0
No. 5, Tondo	913	4	696	0	0	0
No. 6, Paco	458	0	541	0	289	1
Total	2,710	5	3,175	11	1,495	1

Specimens taken from cholera cases and carriers released from isolation at San Lazaro Hospital, by health districts, during the year 1917.

Health district.	First week.		Second week.		Third week.		Fourth week.	
	Specimens.	Positive.	Specimens.	Positive.	Specimens-	Positive.	Specimens.	Positive.
No. 1, Intramuros	42	0	39	0	31	0	30	0
No. 2, Meisic	25	0	3	0	6	0	11	0
No. 4, Sampaloc	292	0	292	0	292	0	292	0
No. 5, Tondo	41	0	33	0	28	0	12	0
No. 6, Paco	7	0	4	0	5	0	0	0
Total	407	0	371	0	362	0	345	0

Health district.	Fifth week.		Sixth week.		Seventh week.		Eighth week.	
	Specimens.	Positive.	Specimens.	Positive.	Specimens.	Positive.	Specimens.	Positive.
No. 1, Intramuros	24	0	24	0	22	0	22	0
No. 2, Maisic	14	0	8	0	5	0	5	0
No. 4, Sampaloc	292	0	292	0	292	1	292	0
No. 5, Tondo	12	0	11	0	7	0	5	0
No. 6, Paco	0	0	0	0	3	0	1	0
Total	342	0	335	0	329	1	325	0

As regards the frequency with which the vibrios have occurred coincidently in the gall bladder and in the lumen of the intestine, the following table shows the result of a number of examinations made as a part of a thorough postmortem investigation in connection with fatal cases of various diseases (suspected cholera, typhoid, diphtheria, tuberculosis, etc.):

Health district.	Specimens.	Loop of intestine.		Gall bladder.	
		Positive.	Negative.	Positive.	Negative.
No. 1, Intramuros	3	0	3	0	3
No. 2, Meisic	14	0	14	0	14
No. 4, Sampaloc	2	0	2	0	2
No. 5, Tondo	5	1	4	0	5
No. 6, Paco	2	0	2	0	2
Total	26	1	25	0	26

On making a resumé of the facts relating to the prevalence of the "vibrio-carrying condition" in the city of Manila during 1917, it is most gratifying to offer for consideration the following comparison between the figures shown in the 1916 annual report and those obtained during 1917:

Vibrio-carrying survey.

	Percentage of "positives."	
	1916.	1617.
Contacts	0.70	0.60
Intestinal infection survey	0.61	0.09
Dead bodies	1.50	0.21
Contacts (not previously sick or carrier) after one "negative:"		
First week	0.61	0.18
Second week	0.48	0.34
Third week	0.26	0.06
Convalescents and carriers discharged from San Lazaro after—		
One week	0.90	-------
Two weeks	0.29	-------
Three weeks	0.35	-------
Four weeks	0.13	-------
Five weeks	0.44	-------
Six weeks	0.65	-------
Seven weeks	0.35	0.30
Eight weeks	0.18	-------
Post-mortem examination:		
(a) Intestine	83.65	3.84
(b) Gall bladder	54.35	-------

These figures show a marked decrease in the clinical and latent cholera infection in full accordance with the absolute absence of cholera from the city at the time this report is being written.

THE PARTICIPATION OF AN ATYPICAL STRAIN OF CHOLERA VIBRIOS IN THE CHOLERA CASES OF 1917.

As stated above, a certain "nonagglutinating" strain of vibrios was included in the survey not only as constituting a matter of record but as a possible factor in the epidemiology of cholera.

On receipt of the first reports of the Bureau of Science giving positive findings of "nonagglutinable vibrios" from fecal specimens of both cases and contacts, the suspicion soon arose that they might well play a rôle in the occurrence of cases and carriers. Cases and carriers thus detected were kept in isolation and under close observation, and all other measures of prevention of further occurrence were put into effect.

It is true that heretofore the test which has become classic in laboratory work for the recognition of genuine cholera vibrio strains, has been just the *agglutination* of the vibrios under study in a strong immune serum of not less dilution than 1 to 4,000. Nevertheless, the recent findings of Aldo Castellani as to the occurrence of a certain (degenerated?) strain of cholera vibrios with characters well distinguishable from those classically attributed to the typical cholera vibrio, and giving rise to certain cholera-like although attenuated symptoms, together with repeated statements of laboratory workers, among them Dr. John A. Johnston of the Bureau of Science, regarding the occurrence at pre- and post-epidemic times of a surprisingly large number of atypical vibrios in suspicious specimens,—all of this suggested the advisability of paying more attention than is usual to the presence or occurrence of such atypical vibrios.

Realizing that the last word is still to be said, as the result of careful laboratory work specialized on these lines, it has been thought, however, that it would be of some interest to keep a careful record of the facts as they relate to these two points:

(*a*) Occurrence of more or less modified types of cholera cases with the atypical "nonagglutinable" vibrios as the only causative organism.

(*b*) Occurrence in cholera cases or healthy carriers of either "agglutinable" or "nonagglutinable" vibrios susceptible of being changed into one another in the same individual and within the same period of observation.

Thus, the observation, from examinations and reports made by the Bureau of Science, gave the following results:

Cholera cases.

Case No.	Examination.							First examination positive.	Last examination positive.
	First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.		
1	Nonaggl.	----------	----------	----------	----------	----------	----------	July 8	July 8
2	Nonaggl.	Aggl.	Aggl.	Aggl.	Nonaggl.	Nonaggl.	----------	Aug. 12	Aug. 25
3	Nonaggl.	Nonaggl.	----------	----------	----------	----------	----------	July 30	Aug. 2
4	Nonaggl.	Nonaggl.	Aggl.	Nonaggl.	Nonaggl.	Nonaggl.	Nonaggl.	Aug. 12	Aug. 31
5	Nonaggl.	Nonaggi.	Nonaggl.	Aggl.	----------	----------	----------	Aug. 19	Aug. 25
6	Nonaggl.	----------	----------	----------	----------	----------	----------	Sept. 5	Sept. 5
7	Nonaggl.	----------	----------	----------	----------	----------	----------	Sept. 6	Sept. 6
8	Nonaggl.	----------	----------	----------	----------	----------	----------	Nov. 3	Nov. 3
9	Nonaggl.	----------	----------	----------	----------	----------	----------	May 21	May 21
10	Nonaggl.	Nonaggl.	Nonaggl.	Nonaggl.	Aggl.	----------	----------	Aug. 12	Aug. 26

Cholera carriers.

Case No.	Examination.							First examination positive.	Last examination positive.
	First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.		
1	Aggl.	Nonaggl.						Sept. 5	Sept. 8
2	Aggl.	Aggl.	Nonaggl.	Aggl.	Nonaggl.			Aug. 14	Aug. 26
3	Nonaggl.	Aggl.	Aggl.	Nonaggl.				Aug. 18	Aug. 26
4	Nonaggl.	Aggl.						Aug. 18	Aug. 24
5	Aggl.	Nonaggl.						Aug. 24	Aug. 26
6	Nonaggl.	Nonaggl.	Nonaggl.					Sept 21	Sept. 29
7	Nonaggl.	Aggl.	Nonaggl.					Sept. 22	Oct. 1
8	Nonaggl.	Nonaggl.						Sept. 26	Oct. 1
9	Aggl.	Nonaggl.						Sept. 28	Oct. 2
10	Nonaggl.	Nonaggl.	Aggl.					Aug. 18	Aug. 29
11	Aggl.	Nonaggl.	Nonaggl.	Nonaggl.	~~Nona~~Aggl.	Nonaggl.		Aug. 23	Sept. 8
12	Nonaggl.	Nonaggl.	Nonaggl.	Aggl.	NonAggl.	Aggl.		Sept. 6	Sept. 30
13	Nonaggl.	Nonaggl.	Aggl.	Nonaggl.	Aggl.	Aggl.	Aggl.	Sept. 17	Oct. 1
14	Nonaggl.	Nonaggl.						Sept. 23	Sept. 27
15	Nonaggl.	Nonaggl.						Sept. 23	Sept. 28
16	Aggl.	Nonaggl.						Aug. 15	Sept. 12
17	Aggl.	Nonaggl.	Aggl.	Nonaggl.				Aug. 14	Aug. 2~~9~~6
18	Aggl.	Nonaggl.						Aug. 16	Aug. 19
19	Aggl.	Nonaggl.	Aggl.	Nonaggl.				Aug. 16	Aug. 26
20	Nonaggl.	Nonaggl.	Nonaggl.	Nonaggl.				Sept. 12	Sept. 23
21	Nonaggl.	Aggl.	Aggl.	Nonaggl.				Sept. 17	Sept. 24
22	Nonaggl.	Nonaggl.						Sept. 18	Sept. 21
23	Aggl.	Aggl.	Aggl.	Nonaggl.	Nonaggl.	Aggl.	Aggl.	Sept. 21	Oct. 1
24	Nonaggl.	Aggl.						Sept. 22	Sept. 28
25	Nonaggl.	Nonaggl.	Nonaggl.	Aggl.				Sept. 26	Oct. 3
26	Nonaggl.	Nonaggl.						Sept. 26	Sept. 30
27	Nonaggl.	Nonaggl.	Nonaggl.	Nonaggl.				Sept. 27	Oct. 4
28	Nonaggl.	Nonaggl.	Nonaggl.					Sept. 30	Oct. 4
29	Aggl.	Nonaggl.						Dec. 2	Dec. 5
30	Aggl.	Nonaggl.	Nonaggl.					Dec. 2	Dec. 20
31	Aggl.	Nonaggl.						Dec. 4	Dec. 7
32	Nonaggl.	Nonaggl.						Dec. 5	Dec. 7
33	Nonaggl.	Nonaggl.						Dec. 6	Dec. 7
34	Nonaggl.	Nonaggl.						Dec. 5	Dec. ~~5~~7
35	Nonaggl.	Nonaggl.						Dec. 7	Dec. 12
36	Nonaggl.	Nonaggl.						Dec. 7	Dec. 12
37	Nonaggl.	Nonaggl.						Dec. 7	Dec. 12
38	Nonaggl.	Nonaggl.	Nonaggl.					Aug. 22	Aug. 30
39	Nonaggl.	Nonaggl.						Sept. 12	Sept. 15
40	Nonaggl.	Nonaggl.						Sept. 16	Sept. 19
41	Nonaggl.	Aggl.	Nonaggl.	Aggl.	Aggl.	Nonaggl.		Sept. 16	Sept. 28
42	Aggl.	Nonaggl.						Sept. 30	Oct. 1
43	Nonaggl.	Aggl.	Aggl.	Aggl.				Sept. 22	Oct. 1

The most remarkable features shown in the foregoing tables are these:

Of the group of *cases*—

Case No. 2—

August 12	Nonagglutinable.
15	Agglutinable.
16	Do.
17	Do.
22	Nonagglutinable.
25	Do.

Case No. 4—

August 12	Nonagglutinable.
15	Do.
16	Agglutinable.
18	Nonagglutinable.
22	Do.
26	Do.
31	Do.

Of the group of *carriers:*

Case No. 2—	
August 14	Agglutinable.
17	Do.
22	Nonagglutinable.
25	Agglutinable.
26	Nonagglutinable.
Case No. 11—	
August 23	Agglutinable.
26	Nonagglutinable.
30	Do.
31	Do.
September 5	Agglutinable.
8	Nonagglutinable.
Case No. 12—	
September 6	Nonagglutinable.
20	Do.
23	Do.
24	Agglutinable.
27	Nonagglutinable.
30	Agglutinable.
Case No. 17—	
August 14	Agglutinable.
22	Nonagglutinable.
25	Agglutinable.
26	Nonagglutinable.
Case. No. 23—	
September 21	Agglutinable.
24	Do.
25	Do.
27	Nonagglutinable.
28	Do.
30	Agglutinable.
October 1	Do.
Case No. 41—	
September 16	Nonagglutinable.
18	Agglutinable.
19	Nonagglutinable.
21	Agglutinable.
24	Do.
28	Nonagglutinable.

SUMMARY.

If the above findings were confirmed by further laboratory studies, the following would be definite instead of being, as they are.

Provisional conclusions.—I. That atypical cholera cases with well-marked cholera symptoms may be coincident with the presence of certain "nonagglutinable vibrio" and the absence of the classic "agglutinating" cholera-vibrio.

II. That in a number of both cholera cases (atypical as regards severity) and carriers, the change of the preëxisting vibrio (either "agglutinable" or "nonagglutinable") into the opposite has been proven with the very significant fact of the absence of the previous form once the change has taken place and until a new change is observed.

III. That the maximum period observed between one change and another has been a week or more, while a minimum of 24 hours has also been repeatedly demonstrated.

IV. That as far as the present observations are concerned, the available evidence tends to show that the "agglutination test," as a hard and fast rule of identification of the cholera vibrio, is no longer *always* tenable, as "agglutinability" appears to be a property (active or passive) that can be acquired or lost under unknown circumstances.

V. As regards the comparative frequency of change from one type into the other the facts may be grouped as follows:

In 10 suspected cholera *cases:*

Agglutinable into nonagglutinable, 2 times.
Nonagglutinable into agglutinable, 4 times.

In 43 cholera *carriers:*

Agglutinable into nonagglutinable, 25 times.
Nonagglutinable into agglutinable 19 times.

This means that for this grounp of *cases* the change from "nonagglutinable" into "agglutinable" was twice as frequent as the opposite change; and for the group of *carriers*, that the change from "agglutinable" into "nonagglutinable" was 1.3 times as frequent as the opposite one.

Practical conclusions.—In a thorough survey of cases and carriers of cholera as a part of the preventive campaign against the disease, it would be unwise to ignore or disregard the existence of the so-called "nonagglutinable vibrios," and failure to isolate, quarantine and disinfect persons or things so infected or liable to such infection, would be a distinctly dangerous omission.

TYPHOID FEVER.

The second report rendered by the committee for the investigation of typhoid fever in the city of Manila did not add much information to that furnished in the first report, which was incorporated in the Philippine Health Service annual report for the year 1916.

If, in addition to this, the fact is taken into consideration that notification of cases of this disease did not meet at once with much favor among the members of the profession in the city, not on account of their own objections but of the strong prejudice on the part of the public against any attempted supervision or control by the health authorities over dangerous communicable diseases and the subsequent eradicative and preventive measures in so much as these vary from those required for smallpox, cholera, plague, and diphtheria, the well-known and better understood epidemics, in the city, it is not strange that the campaign undertaken could not show much accomplishment.

Thus, the general incidence and mortality for typhoid fever, by months and districts, have been as follows:

Typhoid fever in the city of Manila, 1917, by months.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Cases reported	31	9	21	17	20	23	11	12	52	39	66	47	348
Deaths among cases reported	5	7	9	12	10	10	8	9	21	13	15	13	132
Deaths not previously reported as cases	4	7	2	8	4	4	2	9	9	6	4	8	67
Total deaths	9	14	11	20	14	14	10	18	30	19	19	21	199

Typhoid fever in the city of Manila, 1917, by districts.

	Health district.					Total.
	No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	
Cases reported	60	91	70	100	27	348
Deaths among cases reported	17	45	18	45	7	132
Deaths not previously reported as cases	14	22	11	16	4	67
Total deaths	31	67	29	61	11	199

The mortality rate among cases reported as per the above table was 37.93 per cent. Assuming that the 67 deaths learned of only after death represented a similar mortality rate, the total number of unreported cases would amount to 177.

Upon this basis a comparison of these figures with those obtained in 1916 would be as follows:

	1916	1917
Cases reported	243	348
Deaths among cases reported	71	132
Estimated nonreported cases	93	177
Deaths among nonreported cases	27	67
Death rate (per cent)	29.31	37.63
Percentage of nonreported cases	38.27	50.57
Incidence of typhoid per 1,000	[a]1.18	[b]1.79
Mortality for typhoid per 100,000 population	[a]34.60	[b]68.30

[a] Estimited population of Manila for the intercensal year 1916, 283,209.

[b] Estimated population of Manila for the intercensal year 1917, 291,342.

The need was then apparent for an energetic and well studied campaign, the first step of which should consist of an impressive appeal to the medical profession, wherein a plea for the absolute necessity of a thorough notification of all cases by the attending physician should be made.

After a great deal of persistent effort, much talk and diplomatic discussion with a view of gaining an ample foothold in medical and professional opinion, Circular P–47, under date of October 23, was finally issued. The circular reads as follows:

Circular }
P–47. }

To the medical officers on duty at city health districts, members of the medical profession, and others concerned:

The committee for the investigation of typhoid fever appointed by Special Order No. 11, November 24, 1916, having rendered two consecutive reports covering the period from November 24, 1916, to April 12, 1917, has set forth, among others, the following conclusions:

I. Typhoid fever and paratyphoid B. occur at nearly equal rates in the city of Manila.

II. During the above period there occurred but one outbreak, which was limited to a private educational institution in the city. Scattered cases occur regardless of any preëstablished focus.

III. Water and milk supplies, as well as imperfect sewerage proved to have slight or no bearing upon the incidence of typhoid and paratyphoid fever. *Contact infection,* on the other hand, seems to be a well established fact in nearly all cases (previous cases or carriers).

IV. The serological test (Widal-Grüber reaction) has been found to be the only reliable diagnostic test both for patients and presumptive carriers. Blood specimens should be submitted in amounts of not less than 5 or 6 drops collected in capillary tubes furnished by the Bureau of Science. The dried-drop method is inaccurate and not scientific. The examination of stools alone is unsatisfactory.

V. The isolation of cases (preferably in hospitals) seems to be highly commendable.

VI. Antityphoid and antiparatyphoid vaccination for exposed persons proved of prophylactic value in instances where no other accurate means of protection can be furnished to a large number of contacts.

Pursuant to the above conclusions the following rules will be observed in handling typhoid and paratyphoid cases:

1. Cases of typhoid and paratyphoid (A and B) fever are strictly reportable Suspected cases (fever of about one week duration and others) are not exempted from notification.

2. Serological reaction (Widal-Grüber test) will promptly be resorted to, and its result, if positive, will be considered the starting point of all measures to be instituted.

3. In the case of indigent people unable to pay the laboratory fees, the examination may be made free by forwarding the blood specimens through the corresponding health station to the Bureau of Science. In any case capillary tubes for collection of the blood specimen will be furnished free at any of the health stations.

4. Cases of typhoid and paratyphoid fever having no medical attendance in their residences will be disposed of by sending them to any of the existing hospitals (not excluding San Lazaro Hospital) for proper isolation and treatment.

5. Cases attended by any registered physician may be allowed to remain in their residences and be treated therein provided the attending physician will certify in writing to the Director of Health:

(*a*) That the case has been reported.

(*b*) That the attending physician assumes the responsibility of establishing a reasonable isolation of the patient and close attendants, and that every necessary proceeding of *concurrent disinfection* will be carried out in the individual case referred to.

(*c*) That the case will be attended by the attending physician until the termination of the case (recovery, removal to hospital, or death), and that if, for any reason, the physician ceases to render his services to the patient before the termination of the case, previous report of his intention to withdraw from the case shall be made to the Director of Health.

(*d*) Upon the termination of the case, the fact will promptly be notified to the Director of Health.

6. In case the attending physician does not desire to conduct or supervise the work involved in the *concurrent disinfection* (disinfection of patient's discharges, hands of contacts before eating, table utensils, drinking water containers, ice boxes, extermination of flies, etc.) selected disinfectors of the Philippine Health Service will, upon application, take charge of such work. *Terminal disinfection* will at any rate be required to be done by disinfectors of the Philippine Health Service.

7. Rule 5 shall not apply to hotels, tenement houses, boarding houses, colleges, schools, dormitories, or other institutions, nor in private residences where the number of occupants is found to be so great as to interfere with, or make it altogether impraticable to secure proper isolation of the patient: *Provided*, That cases of typhoid or paratyphoid fever may be permitted to be kept in isolation in colleges, schools with intern pupils, or convents, if in the opinion of the Director of Health or his authorized representative, such colleges, schools with intern pupils, or convents are equipped with a hospital or infirmary which guarantees the maintenance of an effective isolation.

8. Physicians in charge of, or otherwise connected with, official or private hospitals in the City of Manila, are hereby earnestly requested to see that the Director of Health be promptly informed of the movement of typhoid or paratyphoid cases to and from their respective hospitals, this information to cover principally the following points:

(*a*) Notification of the case as it enters the hospital or the diagnosis is made.

(*b*) Discharge for recovery, with the patient's prospective address.

(*c*) Removal from hospital not due to recovery, with the prospective address.

(*d*) Death of patient.

9. The search for and disposal of carriers should be taken care of by the medical officers of the health stations.

Typhoid carriers may at the discretion of the Director of Health be disposed of as follows:

(*a*) They may be allowed to live in their residences under the close surveillance of the health authorities, with the understanding that they will, during the whole length of the quarantine, be subject to any instruction given to, and any prophylactic measures imposed upon them by the health authorities, principally in so far as prohibition of attending or frequenting places of public resort and particularly of handling, preparing or selling food (except for the contact's own use) is concerned.

The provisions of Rule of 7 hereof for typhoid or paratyphoid cases will with equal force apply to typhoid or paratyphoid carriers.

(*b*) Carriers who prove themselves unable or unwilling to carry out the restrictive measures imposed upon them by the health authorities, may be subject to isolation in San Lazaro until satisfactory proof is obtained that they no longer harbor the infection.

10. Immunization with antityphoid vaccine is not compulsory unless otherwise directed by the Director of Health in view of the circumstances of the case. Only indigent persons will be entitled to receive free vaccination.

11. The mixed standard vaccine used by the "Typhoid Committees" shows the following composition per c. c.

	Millions.
B. typhosus	250
B. paratyphosus "A"	125
B. paratyphosus "B"	125

The vaccination of adults is carried out as follows:

First injection, ½ of a c. c.
Second injection, 1 c. c.
Third injection 1 c. c.

The interval between one injection and the next should be one week.

The dose for children must be reduced according to age.

Ampoules contaning variable amounts of this standard vaccine may be purchased at the Bureau of Science.

The duration of the immunity conferred by antityphoid vaccination varies from 1 to 3 years.

Antityphoid vaccination does not affect typhoid carriers as far as getting rid of the bacilli is concerned.

J. D. Long,
Director of Health.

Owing to the fact that this circular was issued late in the year, not much reliance can as yet be laid upon its final success. It was only, however, through its provisions that the improvement of the methods could be expected to be attained in dealing with the most difficult problems in connection with the proper management of typhoid cases and carriers.

Radical changes were accordingly made in such management so as to obtain, in the first place, reliable information as regards *where, when,* and *under what specific circumstances* cases or carriers may or do occur, and then prevent both groups of objectionable individuals from free intermingling with nonimmune people as well as from places where their presence may create a great and actual danger.

Thus, at the time this report is closed the procedure is outlined as follows:

For cases—

1. The patient reported or discovered (suspects also).

2. Diagnosis established (usually too late for blood culture; Widal-Grübe reaction only available means).

3. Search (careful and persistent) as far as possible of the source of infection. Determination whether case is a primary or secondary one in the house, also whether local or imported case.

4. Case isolated (either in hospital or home.) Only cases attended by a registered physician allowed, under the latter's responsibility, to be isolated at home. Exceptions to the rule passed upon by the health officer.

5. Concurrent disinfection encouraged (disinfectants furnished free). Terminal disinfection performed by Philippine Health Service disinfectors.

6. Illness ended (recovery or death; in either case report to the Philippine Health Service).

7. In case of recovery, taking of fecal specimens from convalescent until three consecutive "negatives" with a week interval are obtained.

For *contacts* or *carriers*—

1. *Immediate* contacts (family or household of case) first investigated.

2. A "Widal" early made with blood specimens of all contacts to detect "carriers." (Contacts with definite history of having suffered from typhoid may be excluded.)

Positive Widal may mean—

(*a*) To have sufferred a previous severe or mild form of typhoid;

(*b*) To have received antityphoid vaccination; or

(*c*) To be a "carrier" (commonly believed to have suffered from an unrecognized attack).

A positive "Widal" cannot be pronounced "carrier" unless an actual discharge of bacilli (by feces or urine) is shown.

3. A typhoid carrier is not a danger to himself but to unaffected people. Therefore, restrictions should be imposed upon his movements and occupation (debarment from food or drink places and businesses).

For urinary carriers urotropin administered.

After three consecutive "negatives" (fecal or urinary) with a week interval, release from restriction.

4. Nonprotected (Widal negative) contacts, numerous groups of, suggest vaccination.

5. *Remote* contacts (persons and families in the neighborhood) call for a house-to-house inspection during 10 days seeking for suspicious cases of fever.

6. Also a systematic disinfection (house-to-house) of closets, eating and kitchen utensils; precautions with food and drink; elimination of flies.

COMMENT.

From the volume of evidence now at hand it is apparent that so far as past experience goes the statement of the former

"Typhoid Committee" that "water, milk and food have no special bearing upon the causation of typhoid and paratyphoid cases in Manila" still stands out as a rule of the local epidemiology.

As to the remaining factors, viz, "flies" and "contact infection," flies are not sufficiently abundant to constitute a serious source of typhoid infection, and this is the more apparent when one considers that the illness does not prevail to any particular extent in poorly sewered districts nor in the vicinity of stables and low grounds being filled in with garbage, the two well-known breeding or attracting places of flies.

"Contact infection" therefore remains as the only main factor of transmission, but as "contact infection" represents two different conditions, viz.: (*a*) actual typhoid cases, (*b*) typhoid carriers, it would seem interesting to determine to what extent they are exerting any influence in the causation of so-called "secondary cases."

From a survey of cases and contacts made by one of the members of the "Typhoid Committee" the following figures are taken:

Typhoid fever during the year 1917.

Health district.	Cases reported.[a]	Widal test for cases.			Widal test for contacts.			Stool examination of contacts positive for Widal test, and of convalescents.		
		Total samples.	Positive.	Negative.	Total samples.	Positive.	Negative.	Total samples.	Positive.	Negative.
No. 1	41	28	22	6	23	1	22	1	0	1
No. 2	80	50	35	15	19	1	18	11	0	11
No. 4	65	28	22	6	63	4	59	4	0	4
No. 5	113	71	31	40	42	8	34	8	1	7
No. 6	20	4	4	0	5	0	5	1	0	1
Total	319	181	114	67	152	14	138	25	1	24
Per cent positive			62.98	------	------	9.21	------	------	4.00	------

[a] Cases reported after death and patients isolated in hospitals (St. Luke's and Mary Chiles Hospitals) from whom no specimen is customarily taken are included among cases reported.

From the above table it would appear that in the group of cases recognized or suspected clinically as being typhoid cases, 62.98 per cent gave positive Widal test, while for contacts the percentage was only 9.21.

But the most striking feature of the survey was undoubtedly the fact that from 25 fecal specimens taken from convalescent and other presumptive carriers, in *only one case* was the presence of *B. typhosus* demonstrated.

Whether this encouraging negative result will or will not be confirmed in further outbreaks or endemic occurrences; whether or not this has been due to a shorter vitality of the tropical strain of the bacilli than is observed in cold climates, is not known at present. But the feature as stated is suggestive of these two points:

1. A brighter prospect as regards the possibility of reducing the incidence.
2. The necessity of prompt hospitalization of cases (without awaiting confirmation), thus accordingly minimizing the danger of exposure for contacts.

DYSENTERY.

Due to the fact that no satisfactory reporting of the cases has ever been started as yet, it may aptly be said that the sanitary control of such a prosodemic disease is up to the moment this report is being written far from any reasonable degree of efficiency.

Aside from a few routine measures which usually have to do with the general scheme of eradication and prevention of gastrointestinal infections, the whole problem rests in its entirety upon the indirect sanitary rôle played by the private physicians when called on to attend any of the manifold types of disease grouped under the heading "Dysenteries."

Before going into a further discussion of this topic it seems well first to give a general account of the facts relating to the prevalence and mortality shown by the disease during 1917:

Incidence and mortality of dysentery in the city of Manila during the year 1917.

	Cases reported.	Deaths among cases reported.	Deaths not previously reported as cases.
January	2	1	9
February	10	1	13
March	7	2	10
April	2	1	9
May	3	2	11
June	8	5	16
July	5	3	27
August	10	5	23
September	10	3	21
October	17	3	37
November	20	4	41
December	16	8	39
Total	110	38	256

The distribution by health districts was as follows:

District—	Cases reported.	Deaths among cases reported.	Deaths not previously reported as cases.
No. 1	4	0	25
No. 2	30	22	18
No. 4	13	2	28
No. 5	60	13	160
No. 6	3	1	25
Total	110	38	256

Following is a comparison of the figures for the years 1916 and 1917:

	1916	1917
Case reported	80	110
Deaths among cases reported	24	38
Estimated nonreported cases	397	741
Deaths among nonreported cases	119	256
General death rate per 100 for reported and nonreported cases	30	34.54
Percentage of nonreported cases	82.22	87.07
Incidence per 1,000 population	1.68	2.92
Mortality per 100,000 population	50.49	100.91

It is believed that these figures plainly demonstrate the inadequacy of the means employed for the eradication and prevention of the disease if only unofficial action is to be depended upon. Most unhappily, the death rate from dysentery in the city of Manila shows no reduction but, on the contrary, has slightly increased during 1917.

From a sanitary point of view the most unfortunate feature of the case was as high a figure as 87.07 per cent of nonreported cases for 1917, as compared with 82.22 in 1916. Next in importance was the fact that generally speaking the laboratory examination, with the consequent precise determination of the type of the disease, was almost entirely neglected.

Doctors Llora and Gabriel, of the Tondo health district, in a report submitted to the Director of Health, lay special emphasis not only on the prevalence of the entamebic type of dysentery in the city and its frequent association with other parasites (ascaris and trichiuris), a total of 32 per cent in a series of 25 cases, but also on another 32 per cent of dysentery cases caused by either ascaris alone or by the association more often observed of ascaris and trichiuris. A survey of 138 contacts made by the above officers gave the following results:

		Per cent.
Entameba only	1	12.39
Entameba histolytica and ascaris	4	
Entameba histolytica and trichiuris	3	
Entameba histolytica, ascaris, and trichiuris	8	
Entameba histolytica, ascaris, and ankylostoma	1	
Ankylostoma only	1	79.71
Ascaris and ankylostoma	2	
Ascaris, trichiuris, and ankylostoma	2	
Ascaris, trichiuris, strongiloides, and ankylostoma	1	
Trichiuris and ankylostoma	2	
Ascaris only	48	
Ascaris and trichiuris	44	
Ascaris and oxyuris	1	
Trichiuris only	9	
Negative	11	7.97
Total	138	

The possible bearing upon this semiepidemic of dysenteries of fly pests bred at large in the immense piles of garbage used in the filling of low lands, which are particularly numerous in Tondo district, was also discussed in the above-mentioned report.

A study of the situation as it refers to the participation of fly pests in the causation of dysenteries was accordingly undertaken, and the question as to whether or not the use of garbage material for filling-in operations may be detrimental to the public health as a breeding medium for flies still remained open. Now, specialized studies on this subject brought about the conclusion that in a great number of cases the trouble only arises when *stale garbage* is used for filling wherein fly eggs and even larvae are already in existence long before being removed to the dumping low land.

The wrong part of the process, therefore, has rather to do with the primary collection of garbage in the household and further delayed removal of same by the night garbage carts.

It is to cover this essential point the scheme that Circular P–46, October 23, 1917, was issued.

Circular
P–46

To all medical officers in charge of city health districts, and others concerned.

The following points in connection with the daily house-to-house inspection by assistant sanitary inspectors in the city health districts are brought to the attention of all concerned with instructions that the provisions contained therein be rigidly enforced hereafter:

IMPROPER REFUSE DISPOSAL.

The fact that a given household is provided with garbage can (section 833, Revised Ordinances) is not necessarily a proof that all the nuisances usually attached to the handling and disposing of refuse are eliminated. Careless use, or lack of use, of the garbage receptacles would still be a distinct violation of the section of the Revised Ordinances dealing with the collection and disposal of garbage.

The collection and disposal of garbage where suitable and sufficient garbage receptacles are in existence may yet be insanitary:

(*a*) If garbage is found scattered in one or various spots of the premises.

(*b*) If kept uncovered even in suitable and sufficient garbage receptacles.

(*c*) If kept totally or in part for more than 24 hours on the premises.

Either one of these conditions whenever met with in the daily house-to-house inspection should cause the inspector to issue a sanitary notice (minor order) stating in which particular way the garbage disposal has been found insanitary and giving such instructions as, if obeyed, will insure that the nuisance will not recur. After a first and a second sanitary notice (or minor order) have been served without securing the desired result, the case should be referred to the city fiscal's office for prosecution.

Perhaps, of the points above given, point (*c*) is most difficult to deal with since it is difficult to ascertain the exact length of time a portion of garbage has been kept on the premises before removal.

However, two points are to be considered whenever doubtful cases are to be decided:

1. The development of the characteristic offensive odor in any amount of garbage does not take place except when garbage has been stored for more than 24 hours.

2. Garbage cans which are overloaded to the extent of remaining forcibly uncovered (section 832 of the Revised Ordinances) in most of the cases would mean that the amount stored or a part thereof corresponds to a longer period than 24 hours.

COMMENT.

If the above results are all that can reasonably be expected from the policy of the past, it now seems to be high time for the Service to plan a standard scheme for a comprehensive control of the disease, this control to cover the following principal points:

I. More strictly enforced notification of cases.

II. Determination of the type of dysentery by laboratory examination.

III. Forcible hospitalization of cases not attended by private physicians.

IV. Attenuated control of carriers.

DIPHTHERIA.

Diphtheria continues to be for the local epidemiology a sort of menace so far not developed into any actual danger, to the life of the children of school age in the city of Manila.

The incidence and mortality for 1917 were as follows:

Diptheria in the city of Manila for the year 1917.

[By months.]

Month.	Total cases reported.	Positive.		Positive bacteriologically.
		Cases.	Deaths.	
January	18	16	7	3
February	7	7	1	1
March	14	13	3	4
April	3	1	1	0
May	4	1	0	1
June	9	6	4	3
July	6	4	1	2
August	12	9	4	1
September	11	8	3	0
October	14	6	2	0
November	7	5	0	0
December	5	3	1	0
Total	110	79	27	15

Diphtheria in the city of Manila for the year 1917.

[By districts.]

District—	Cases reported.	Positive clinically and bacteriologically.		Positive clinically only.		Total found positive.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
No. 1, Intramuros	17	4	0	9	0	13	0
No. 2, Meisic	22	5	2	11	9	16	11
No. 4, Sampaloc	25	4	0	15	3	19	3
No. 5, Tondo	28	2	2	17	8	19	10
No. 6, Paco	18	0	0	12	3	12	3
Total	110	15	4	64	23	79	27
Per cent positive		13.63		59.09		71.81	
Death rate			26.66		35.38		34.17

The table by months shows a marked tendency toward an increased prevalence of the disease at both ends of the year, the well-known seasonal periods in which cold infections are more likely to occur. While, however, this rule holds for the total number of cases reported and for those "positive" either clinically and bacteriologically or clinically only, such is not the case with those *strictly bacteriological* cases, which amounted to only 15 during the year, there being absolutely *none* during the last third of the year.

The table by districts shows in a total of 110 cases reported a percentage of 13.63 of "positive bacteriologically" as compared with 59.09 "positive clinically only," and the death rate as shown in the same table was 26.66 per cent for "positive bacteriologically" and 35.38 per cent for "positive clinically only."

If the fact is taken into consideration that antitoxin treatment started without delay upon a case being reported to San

Lazaro, regardless of confirmation of the diagnosis as a result of the laboratory examination, it is rather surprising that as high death rates as the above (26.66 and 35.38 per cent) were obtained in 1917.

The epidemiological explanation of this high mortality can perhaps be found in either or both of the following alternatives:

I. Tardy diagnosis and much delayed administration of the antitoxin.

The time which had elapsed before reporting the 110 cases reported during 1917 was as follows:

6 hours	3	10 days	1
12 hours	2	14 days	1
1 day	17	18 days	1
2 days	16	21 days	1
3 days	27	About 1 month	2
4 days	19	1 month and 15 days	1
5 days	3	Undetermined	2
6 days	4		
7 days	9	Total	110
9 days	1		

Against this view, however, is the lack of any information regarding the pervalence in Manila or the Philippine Islands of *post-diphtheritic paralysis* so commonly observed following belated administration of the antitoxin in recovered cases of genuine diphtheria.

II. As an alternative to the preceding view, it is possible that a majority, if not all, of the cases are atypical mixed infections which naturally fall under only the partial control of the antitoxin treatment.

Further studies toward determining the collateral infecting germ would be highly interesting.

DIPHTHERIA CARRIERS.

The following tables show the figures as regards diphtheria carriers during the year and give the impression that such carriers have possibly ceased to be for the present a very serious problem:

Diphtheria carriers in the city of Manila for the year 1917.

January	2	August	1
February	1	September	0
March	3	October	0
April	0	November	1
May	2	December	0
June	5		
July	5	Total	20

Swabs taken from schools and households, and number of diphtheria carriers found, by districts, 1917.

Health district—	Schools.		Households.		Total.	
	Swabs taken.	Positive.	Swabs taken.	Positive.	Swabs taken.	Positive.
No. 1, Intramuros	80	1	176	9	256	10
No. 2, Meisic	150	0	155	2	305	2
No. 4, Sampaloc	36	0	349	6	385	6
No. 5, Tondo	87	0	110	1	197	1
No. 6, Paco	48	0	89	1	137	1
Total	401	1	879	19	1,280	20
Per cent positive	--------	0.24	--------	2.16	--------	1.56

The following is a comparison of the figures on the diphtheria situation for the years 1916 and 1917:

	1916	1917
Cases reported	164	110
General death rate (per cent)	18.29	24.54
Percentage of "positives" bateriologically	26.82	13.63
Death rate among "positives" bateriologically	18.18	26.66
Percentage of "positives" clinically only	42.68	59.09
Death rate among "positives" clinically only	31.42	35.38
Incidence of diphtheria (positive only) per 1,000 population	0.40	0.37
Mortality from diphtheria (positive only) per 100,000 population	10.59	9.26
Percentage of carriers in schools	2.85	0.24
Percentage of carriers in households	5.89	2.16
General percentage of carriers	5.09	1.56

MEASLES.

The prevalence of measles in the city of Manila during 1917 was as follows:

Month.	Cases.	Deaths.	Month.	Cases.	Deaths.
January	6	0	August	12	0
February	7	0	September	26	0
March	8	0	October	41	1
April	3	1	November	53	0
May	6	0	December	55	0
June	9	0			
July	11	0	Total	237	2

The distribution by city districts, as well as the association of measles and the diphtheria-carrying condition was investigated with the following results:

Health district.	Measles cases.					Total diphtheria carriers reported by the Bureau of Science.
	Total.	Filipinos.	Americans.	From shools.	From private houses.	
No. 1, Intramuros	93	80	13	38	55	-----------
No. 2, Meisic	27	25	2	5	22	-----------
No. 4, Sampaloc	36	33	3	6	30	-----------
No. 5, Tondo	45	42	3	11	34	-----------
No. 6, Paco	36	32	4	18	18	-----------
Total	237	212	25	78	159	-----------
Per cent	-------	89.45	10.55	32.91	67.09	-----------

SMALLPOX, VARIOLOID AND VARICELLA.

In the annual report for 1916 it was stated that the markedly increasing number of varioloid cases in Manila could well be taken as an indication that the immunization conferred upon the city population over ten years ago by a thorough and extensive wholesale vaccination was beginning to be lost, and that the epidemiological moment was one which would rather call not only for the vaccination of unprotected people but for revaccination of people supposedly protected by vaccination over three years old.

There was a further increase during the past year as shown in the following table:

Month.	Smallpox.				Varioloid.				Varicella.			
	Cases.		Deaths.		Cases.		Deaths.		Cases.		Deaths.	
	1916	1917	1916	1917	1916	1917	1916	1917	1916	1917	1916	1917
January					6	4				20		
February	1		1		4	26			7	25		
Manch		1			14	49			8	41		
April					13	14			5	10		
May		1		1	4	11			4	9		
June					7	2			2	2		
July					4	4			2	4		
August					2	2			1	2		
September					2					5		
October					1	9			6	1		
November		1		1	1	6			19	7		
December					4	2			2	4		
Total	1	3	1	2	62	129			56	130		

Vaccinations, 1917.

Health district—	Vaccinations.	Inspections.	Positive.	Negative.
No. 1, Intramuros	8,705	2,605	1,446	1,159
No. 2, Meisic	19,011	2,196	1,394	802
No. 4, Sampaloc	10,851	8,483	6,923	1.560
No. 5, Tondo	25,422	8,181	4,326	3,855
No. 6, Paco	17,401	4,944	2,893	2,051
Total	81,390	26,409	16,982	9,427

	1916	1917
Percentage of population vaccinated	19.76	27.93
Percentage of vaccinations inspected	23.18	32.44
Percentage of "positives" among inspected	45.21	64.30

SUPERVISION OF WATER SUPPLIES.

The importance of this retail supervision of the drinking water used in a vast number of public places in the city cannot perhaps be well understood except by those conversant with the prevailing conditions in a tropical locality where the so-called water-borne diseases are rampant.

Aside from the municipal waterworks through which the population is furnished a good quality of water which after being submitted to a process of sedimentation and hypochlorite purification, is daily tested biologically at three different points along the water mains to trace colon and similar contamination, there are also a great number of intermediate stations from the city hydrant to the mouths of the consumers where contamination may take place and which are fairly well represented by the following institutions and public places where drinking water is served:

1. Bars.
2. Hotels.
3. Lodging and boarding houses.
4. Restaurants.
5. Saloons, soda fountains, ice cream parlors, etc.
6. Schools (private).
7. Schools (public).
8. Soda water factories.
9. Tiendas.
10. Other public places.

This retail examination as made in 1917 has given the following results:

Healt district—	Samples examined.	Bacterial Count.			Positive for—					Samples unfit for drinking.	Percentage unfit for drinking.
		10,000 and over	100,000 and over.	1,000,000 and over.	Presumptive test.	Bacillus coli.	Amoeba.	Flagellates.	Ciliates.		
No. 1, Intramuros	95	71	24	0	32	6	11	32	11	6	6.32
No. 2, Meisic	467	310	157	0	200	75	49	117	96	75	16.06
No. 4, Sampaloc	212	135	75	2	74	16	13	37	12	18	8 49
No. 5, Tondo	702	520	180	2	248	79	54	260	102	81	11.54
No. 6, Paco	252	192	58	2	107	50	39	80	39	52	20.63
Total	1,728	1,228	494	6	661	226	166	526	260	232	13.43

Fines imposed.

District No. 1, Intramuros	₱34
District No. 2, Meisic	150
District No. 4, Sampaloc	5
District No. 5, Tondo	170
District No. 6, Paco	29
Total	388

A comparison of these figures with those for 1915 and 1916 is as follows:

	1915	1916	1917
Number of samples examined	804	2,212	1,728
Samples found unfit for drinking	390	870	232
Percentage unfit for drinking	48.50	39.33	13.43

HYDROPHOBIA.

The Division is most fortunate to be able to say that during 1917 no *case* of hydrophobia has occurred in the city of Manila.

Since the proclamation published by the Director of Health with the approval of the Honorable the Secretary of Public Instruction (March 30, 1916), and Circular 0–34, March 31, 1916, containing instructions for the handling of cases of rabies were issued, the work of both eradication in animals and prevention in persons was given extraordinary impetus with the faithful and valuable coöperation of the Bureau of Science, the College of Veterinary Science, University of the Philippines, and the Police Department of the city of Manila.

Most, however, of these fortunate results were due to the splendid coöperation afforded by the serological department of the Bureau of Science by administering free of charge the Pasteur prophylactic treatment to each and every one of the bitten persons who were once and again warned and encouraged to report for treatment to the Bureau of Science by the medical officers of the Service.

A resumé of the prevalence of rabies in the city is as follows:

Numerical report of the incidence of rabies in dogs and in persons during the year 1917.

Health district—	Number of suspected dogs examined.		Number of persons bitten by suspected dogs.	
	Examined.	Found positive.	Persons bitten.	Contracted the disease.
No. 1, Intramuros	11	1	5	
No. 2, Meisic	27	5	27	
No. 4, Sampaloc	21	6	25	
No. 5, Tondo	15	1	16	
No. 6, Paco	9	1	9	
Total	83	14	82	
Percentage positive		16.87		

PLAGUE AND PLAGUE PREVENTION WORK.

The year has been absolutely free from any human or rodent case of plague.

The rat campaign, however, has been pursued, as shown in the following table:

Rats caught by spring traps	92,113
Rats caught by wire traps	90
Rats found poisoned	5,563
Rats caught by dogs	0
Rats killed by clubs and other weapons	13,700
Rats found dead from other causes, probably from poison	2,167
Total	113,633
Rat-catchers employed	17
Complaints received during the year	696
Complaints attended	696

Sanitary orders, rat-proofing.

Sanitary orders remaining January 1, 1917	59
Sanitary orders issued	38
Total	97
Sanitary orders completed	60
Sanitary orders canceled	2
Sanitary orders pending action by fiscal	13
Sanitary orders awaiting action	22
Total	97

Sanitary orders, cleaning.

Sanitary orders remaining January 1, 1917	10
Sanitary orders given verbally	2,739
Sanitary orders completed	2,749
Sanitary orders awaiting action	0

Mosquito and fly extermination.

Houses inspected during the year	132,311
Houses where breeding places were found	15,542
Number of breeding places found in houses	16,749
Vessels ordered emptied or removed	14,552
Drains ordered cleaned	13,896
Lineal feet of drains ordered dug	2,187
Breeding places oiled on private premises	128,855
Breeding places oiled on public properties	105,590
Water receptacles overturned	12,208
Square feet of grass ordered cut	943
Cans of oil used	7,632½
Sanitary orders issued	1,645
Insanitary conditions reported to health stations	105
Number of complaints attended	587
Number of fines:	
₱25 each	1
10 each	1
6 each	2
5 each	12
3 each	15
2 each	1

Fly inspector's report.

Stables inspected	18,798
Stables ordered cleaned	12,347
Stables cleaned	9,133
Market inspections made	240

Disinfections.

Cholera	222
Diphtheria	118
Dysentery	2
Glanders	2
Foot and mouth disease	1
Gonorrhoea	3
Insanitary conditions (miscellaneous)	67,397

Leprosy	76
Measles	141
Mumps	45
Pertussis	3
Smallpox, varioloid and varicella	199
Tuberculosis	384
Typhoid and paratyphoid	279
Total	68,872

Action taken on applications for licenses.

Kind of license applied for.	Approved.	Disapproved.	Total.
Liquor:			
First-class bars	68	1	69
Second-class bars	26	4	30
First-class bars and restaurants	45		45
Second-class bars and restaurants	21	1	22
Groceries	77		77
Wholesale	31		31
Druggists	9		9
Theaters	8	4	12
Hotels	57		57
Restaurants	580	44	624
Lodging houses	10		10
Boarding houses	55	4	59
Native wines	2,690	33	2,723
Cooked foods, vegetables, soft drinks, and bakery products	2,701	79	2,780
Second-hand articles	142		142
Barber shops	511	17	52
Barber shops, additional chairs	1		
Laundries	61	1	6
Public vehicles	562	35	597
Livery stables	37	6	43
Billiard and pool tables	111	3	114
Dyeing and cleaning establishments	29		29
Manufactories	327	12	339
Grocery stores	313		313
Clubs	71		71
Advertising agencies	4		4
Garages	29		29
Theaters and cinematographs	45		45
Bicycles for hire	29	1	30
Circuses	1		1
Bowling alleys	1		1
Distilleries	12		12
Horseshoeing establishment	36	1	37
Permits to sell fruits, vegetables, etc	76	3	79
Permits to sell vinegar	4		4
Pawnbrokers	37		37
Storage of sugar	26		26
Blacksmith shops	97	1	98
Forges	10		10
Draying establishment	3		5
Ice cream and iced mongo	124	1	125
White taju	18	2	20
To store combustible materials	7		7
Employment agencies	2		2
Junk shops	43		43
Permits to sell lard	1		1
Additional automobiles	8		8
Stockyards	3	1	4
Drug stores	1		1
Undertakers	10		10
Drying and selling fish	25		25
Bakeries	42	1	43
Contractors for electrical installations	7		7
Foundries	13		13
Tattooers	7		7
Tanneries and selling leather	9		9
Dairies	7		7
Shooting galleries	1		1
Permits to can and preserve fruits	1		1
To sell fresh milk	1		1
To operate a slot machine	1		1
Breweries	2		2
To sell gelatine and pastries	1		1
Auctioneers	1		1
Boarding stables	4		4
Embalmers	3		3
Total	9,295	255	9,550

SANITARY ORDERS.

Minor orders issued by assistant sanitary inspectors.

	District—					Total.
	No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	
First minor orders issued	674	1,137	445	858	309	3,423
First minor orders complied with	646	1,137	445	857	282	3,367
Second minor orders issued	28			1	27	56
Second minor orders complied with	28			1	27	56
Prosecutions						
Fines imposed						
Total amount of fines						
Cases in which imprisonment was imposed						
Cases dismissed or defendant acquitted						

Garbage can orders, station orders (miscellaneous), and recommendations for sewer connection.

Health district—	Garbage can orders.	Station orders (miscellaneous).	Recommendations for sewing connection.
No. 1, Intramuros	216	60	2
No. 2, Meisic	499	476	33
No. 4, Sampaloc	694	227	5
No. 5, Tondo	258	1,605	5
No. 6, Paco	504	106	3
Total	2,171	2,474	48

CLEAN-UP WEEK.

"Clean-up week," or the annual intensive campaign against "nuisances" of every description has been enthusiastically observed during the month of December, a summary of the activities of the division during such period being as follows:

Health district—	Places found insanitary.				Insanitary conditions corrected.				Employees.	Days spent.
	A.	B.	C.	D.	A.	B.	C.	D.		
No. 1, Intramuros	217	207	152	282	217	207	152	282	10	10
No. 2, Meisic	1,425	203	233	4,030	1,425	203	233	4,030	12	15
No. 4, Sampaloc	695	131	395	1,580	482	93	209	1,105	9	21
No. 5, Tondo	5,242	2,804	154	1,973	5,028	2,788	154	1,938	14	15
No, 6, Paco	434	265	543	846	370	229	526	846	12	15
Total	8,013	3,610	1,477	8,711	7,522	3,520	1,274	8,201	57	76

NOTES (A) Improper handling of drinking water.
(B) Mosquito breeding places.
(C) Domestic animals.
(D) General cleaning.

MEDICAL INSPECTION OF SCHOOLS.

The general scheme for this work was to detail one nurse to make the inspection of the children in a certain school and every pupil found with any abnormality or defect was sent to the clinic at the corresponding health station for treatment, after being carefully examined by the physician in charge. Those pupils having a private physician were requested to report to him and to that end the principal of the school was duly notified so that he might advise the parents in every case.

Pupils found suffering with any excludable disease were immediately excluded from school and not allowed to return until cured. A certificate from an officer of the Philippine Health Service is required before these pupils are again admitted.

In so far as the very limited personnel available permitted, the inspection work was extended to the homes of the pupils, but this could only be done in a very few cases. There are at present four clinics in operation for the treatment of school children: one in Intramuros, one in Sampaloc, one in Tondo, and one in Meisic. Each clinic is in the health station of the district. A nurse attends each clinic and the doctors in charge of the stations render medical service whenever it is necessary in the absence of the medical inspector of schools.

To perform the work above described, two medical inspectors and five nurses are distributed as follows: one medical inspector with one nurse at the schools south of the Pasig River; the other medical inspector and four nurses at the schools north of the Pasig River. The inspection work is done during the morning and the clinical work in the afternoon at the health stations. Of the five nurses, four are supplied by the city schools department and one by the Philippine Health Service without any additional expense to the city.

Due to lack of personnel, a second inspection of the schools could not be completed during the year. This is insufficient to detect every important defect or excludable disease which ought to be immediately excluded and treated, nor can this limited personnel extend its attention to the homes of the pupils for instruction to the mothers and also for detection of the origin of the infections found, in many instances due to lack of home care or insanitary conditions of dwelling. This is an important subject with regard to the health condition of the school children, and it is recommended that the number of nurses be increased for the coming year, which would result in great benefit to the pupils and their families.

Insanitary conditions in school buildings were found as follows: Intramuros Primary School, poor light and ventilation in many rooms, undesirable surroundings, no place for exercise in the open air; Malate Primary School, two or three rooms poorly lighted; Santa Mesa Primary School, poor light and ventilation in many rooms; Meisic Primary School, almost every room very poorly lighted.

All medical cases are easily provided for at the dispensaries and especially the school clinics, but over one-third of the school children are suffering from decayed teeth and diseased gums; therefore, if even one dental clinic could be established on the south side of the Pasig River, similar to the one at Meisic school, it would be of great advantage.

The school clinic, as in the past in Manila and wherever tried in the United States, has proved a most helpful institution in school inspection. The school clinic serves many purposes. Here are treated cases of eye and skin diseases, medical and minor surgical cases. Pupils, especially girls, who are suffering from headache, lack of strength, etc., are sent to the school clinic for examination. Sometimes they are sent to an oculist to have their eyes refracted, sometimes they remain under observation for weeks or months being weighed each week, given medicine, advice as to food, exercise, etc. A number of cases of incipient tuberculosis have thus been enabled to keep on with their school work and at the same time improve their health. There are a number of advantages in having the children attend a clinic supervised by the school physician and nurse rather than a public dispensary. The school physician sees the case in the school and makes the diagnosis there. When the patient reports at the clinic all the records are available and the child is treated without loss of time.

The children, most of whom are unacquainted with any physician, go willingly to the place where they will find the doctor and nurse they already know whereas nothing would persuade them to visit a strange doctor. Even adults have decided preferences as to the doctors they will employ. Furthermore the parents regard the school clinic as a part of the system of public instruction and usually make no objection to the children attending it.

Another function of the school clinic is as a place of consultation for parents. Not infrequently parents bring their children because they are ailing or have been exposed to infection.

Occasionally contagious diseases are detected in the clinic, as for instance during the past few months some cases of varicella and mumps.

That the school clinic is appreciated is shown by the fact that students from the private schools of the city and from the provinces come, of their own initiative, for consultation and treatment.

The practice of requiring a medical certificate for entrance to school has proved most satisfactory. A great per cent of the children applying for certificates were found to be suffering from trachoma.

A total of 52 school buildings, with school attendance of 27,221, were under inspection during the year. In 35 of these schools the children were examined twice, while the remainder were inspected only once, it not having been possible to complete the second examination in all the schools. Thus, among the 27,221 pupils attending the schools, only 17,461 were examined twice, leaving a remainder of 9,760 or 35.8 per cent examined only once.

There were 667 homes visited by the school nurses during the year, a very low percentage of the homes of the school children examined, but it is impossible to do more unless the number of school nurses is increased to eight.

The following table showing the clinical work performed during the year demonstrates the importance of the clinics and the necessity of keeping them in operation morning and afternoon instead of their being limited to half a day as has been the practice up to the present:

Clinical work.

Month.	Clinic district—	Operations.	Treatments.	Cured.
January	No. 1, Intramuros		488	18
	No. 2, Meisic		1,898	27
	No. 4, Sampaloc		142	8
	No. 5, Tondo		395	
	No. 6, Paco		139	
February	No. 1, Intramuros		153	1
	No. 2, Meisic	38	1,630	37
	No. 4, Sampaloc		103	2
	No. 5, Tondo		414	
	No. 6, Paco		130	
March	No. 1, Intramuros		675	
	No. 2, Meisic	21	951	27
	No. 4, Sampaloc		1,277	
	No. 5, Tondo		143	
	No. 6, Paco			
April	No. 1, Intramuros		351	
	No. 2, Meisic	8	1,198	4
	No. 4, Sampaloc		854	
	No. 5, Tondo		169	80
	No. 6, Paco		2	1
May	No. 1, Intramuros		784	
	No. 2, Meisic	12	2,128	17
	No. 4, Sampaloc		2,274	
	No. 5, Tondo		473	
	No. 6, Paco			
June	No. 1, Intramuros		2,158	
	No. 2, Meisic	32	4,332	11
	No. 4, Sampaloc		4,259	
	No. 5, Tondo		1,055	
	No. 6, Paco			
July	No. 1, Intramuros		2,324	18
	No. 2, Meisic	56	4,286	50
	No. 4, Sampaloc		3,732	80
	No. 5, Tondo		3,120	5
	No. 6, Paco		26	2
August	No. 1, Intramuros		1,344	11
	No. 2, Meisis	57	3,921	122
	No. 4, Sampaloc		1,130	20
	No. 5, Tondo		3,020	45
	No. 6, Paco		17	1
September	No. 1, Intramuros		2,738	42
	No. 2, Meisic	13	3,109	73
	No. 4, Sampaloc		1,363	19
	No. 5, Tondo		1,920	15
	No. 6, Paco		11	
October	No. 1, Intramuros		1,071	56
	No. 2, Meisic	3	3,555	68
	No. 4, Sampaloc		1,476	28
	No. 5, Tondo		2,130	15
	No. 6, Paco		18	
November	No. 1, Intramuros		1,583	26
	No. 2, Meisic		1,432	35
	No. 4, Sampaloc		1,722	41
	No. 5, Tondo		2,827	30
	No. 6, Paco		7	
December	No. 1, Intramuros		1,224	
	No. 2, Meisic		884	37
	No. 4, Sampaloc		701	15
	No. 5, Tondo		1,320	30
	No. 6, Paco		2	
Total		240	84,353	1,117

From the following table it will be seen that the defects found amounted to 26,199 in the first examination, among the 27,221 pupils examined. These defects were in the majority of cases remediable.

School inspection—number of pupils examined and of defects found.

School.	First examination.			Second examination.		
	Month.	Pupils examined.	Defects found.	Month.	Pupils examined.	Defects found.
Tondo Intermediate	June	1,313	1,583	November	1,265	1,719
Santa Cruz Intermediate	do	645	610	do	671	1,009
San Nicolas Intermediate	do	431	368			
Paco Intermediate	do	759	571	October	739	460
Ermita Intermediate	do	470	234	do	441	223
Sampaloc Intermediate	July	505	935	November	540	793
San Sebastian Primary	do	775	683	do	660	480
Lincoln Primary	do	925	1,246	October	692	801
Manila High	do	1,289	556	do	1,173	564
Central	do	473	166	do	450	145
Ermita Training	do	419	270	do	413	362
Rizal Primary	do	1,438	1,722	November	1,344	1,890
Meisic Primary	do	2,353	1,671	December	2,358	1,996
Soler Primary	do	482	291	do	526	465
San Miguel Primary	do	116	117	November	234	404
Paco Primary	do	1,063	863	do	898	828
Azcarraga Primary	August	513	303	December	491	334
Gagalangin Primary	do	1,029	1,476	do	920	1,553
San Andres Primary	do	722	483			
Normal	do	922	579			
Blind and Deaf	do	60	84			
Intramuros Primary	do	504	376	November	439	706
Malate Primary	do	401	299	do	359	635
Yangco Primary	do	286	428	December	274	454
Singalong Primary	September	264	231	do	270	461
Herran Primary	do	374	369	do	340	476
Santa Ana Primary	do	642	593			
San Nicolas Primary	do	1,695	2,282			
Quiapo Primary	do	938	996	November	849	500
Santa Cruz Primary	do	309	230	December	307	203
Arts and Trades	do	535	328			
Pandacan Primary	do	407	276			
Guipit Primary	October	430	527			
Magdalena Primary	do	362	351			
San Lazaro Primary	do	768	1,074			
Zurbaran Primary	do	456	358	December	546	480
Lico Primary	do	264	318			
Santa Mesa Primary	do	800	767			
Santa Clara	do	870	1,414			
School of Commerce	do	214	171			
Total		27,221	26,199		16,673	17,476

The following table shows the defects found in the school inspection:

Medical inspection of school.

[First inspection—school year 1917-18.]

School.	Number of pupils examined.	Dangerous communicable diseases.								Contagious eye affections.				Parasitic skin diseases.				
										Trachoma.								
		Smallpox or varioloid.	Varicella.	Measles.	Diphtheria: Mild atypical and carriers.	Whooping cough.	Mumps.	Tuberculosis with open lesions.	Other diseases.	Percentage.	Number.	Acute conjunctivitis.	Percentage.	Scabiosis.	Pediculosis (live pediculi).	Favus.	Other Diseases. (Acne and other eruptions).	Percentage.
District of Meisic:																		
Meisic Primary	2,353									3	72	26	4.1				31	1.3
Meisic Primary Branch	482									2.9	14	2	3.3				4	.8
San Nicolas Primary	1,695									2.7	47	16	3.7	5			43	2.8
San Nicolas Primary Branch																		
Azcarraga Primary	513									3.8	20		3.8			2		.3
Zurbaran Primary	456									2.8	13	2	3.2				6	1.3
Santa Cruz Primary	309									3.8	12	6	5.8				2	.6
Santa Cruz Intermediate	645									1.1	5	6	1.7				2	.3
San Nicolas Intermediate	431									3.9	17	4	4.8					
District of Tondo:																		
Tondo Primary	1,438									1.2	17	2	1.3	27			12	2.7
Tondo Primary Branch																		
Yangco School (T. P. B.)	286									1.3	4	4	2.7			3		1
Gagalangin Primary	1,029									.7	8	4	1.1	12			26	3.3
Magdalena Primary	362									3.3	12		3.3				1	.2
Lico Primary	264						1			.4	1		.4	1			3	1.5
San Lazaro Primary	768									1.4	11	1	1.5	18			11	3.5
San Lazaro Primary Branch																		
Santa Clara Primary	870									.8	7	3	1.1	13			7	2.2
Tondo Intermediate	1,313									2.1	28	6	2.5	10			11	1.5
Tondo Intermediate Branch																		

District of Sampaloc:																		
School of Commerce	214									.4	1		.4					
San Sebastian Primary	775									2	16	11	3.4				5	.6
San Sebastian Branch																		
R. Hidalgo Primary	938									2.9	28	10	4				6	.6
R. Hidalgo Primary Branch																		
Sampaloc Primary	925									3.2	30	12	4.5				20	2.2
Sampaloc Primary Branch																		
San Miguel Primary	116									6.8	8	3	9.4				3	2.5
Guipit Primary	430									2.3	10	3	3				8	1.8
Santa Mesa Primary	800									1.8	15	7	2.7				8	1
Sampaloc Intermediate	505									2.1	11	4	2.9				4	.7
Sampaloc Intermediate Branch																		
District of Intrammros:																		
Ermita Training	419		1							2.1	9	2	2.6					
Intramuros Primary	504									1.1	6		1.1	2				.4
Malate Primary	401									.5	2		.5					
Central School	473									2.9	14	1	3.1					
Blind and Deaf	60									3.3	2		3.3					
Normal School	922									.3	3		.3					
Arts and Trades	535																	
Manila High	1,289													2		2		.3
San Andres Primary	722									.7	5		.7	1				.1
Ermita Intermediate	470									.4	2		.4			1		.2
District Paco:																		
Herran Primary	374									.5	2		.5	2				.5
Herran Primary Branch	264									.7	2		.7					
Santa Ana Primary	642									1	7		1	1				.1
Paco Primary	1,063									.9	10	4	1.3	2	1	1		.3
Paco Primary Branch																		
Pandacan Primary	407						1											
Paco Intermediate	759									1	8	1	1.1					
Paco Intermediate Branch																		
Total	27,221		1				2			1.8	479	140	2.3	96	1	9	213	1.1

Medical inspection of school—Continued.

School.	Myopia.	Common school diseases.															Excluded.	Total Defects.
		Other eye affections (Cath. conjunctivitis, chronic conjunctivitis, pterygium astigmatism, strabismus, ptosil).	Adenoids.	Tonsils hypertrophied.	Dental caries.	Defects of hearing.	Discharge from one ear.	Discharge from both ears.	Adenitis, tubercular.	Tuberculosis without open lesions.	Tinea.	Pediculosis, no live pediculi.	Bodily deformities.	Mental defects.	Backward development.	Other diseases (bronchitis, valvular lesion, gastritis, mialgia, pleuresy, anemia, chorea, asthma, adenitis).		
District of Meisic:																		
Meisic Primary		470		81	828		1			1	144					14	129	1,668
Meisic Primary Branch		42		18	143				9		45					14	20	291
San Nicolas Primary	2	557		116	1,028		1		5	3	365					94	71	2,282
San Nicolas Primary Branch																		
Azcarraga Primary		95		21	100	2			9		41					13	20	303
Zurbaran Primary		107	26	47	101	3					30					23	21	358
Santa Cruz Primary		122		8	45						17					18	20	230
Santa Cruz Intermediate		271		14	296						16						13	610
San Nicolas Intermediate		184		4	156	1					1					1	21	368
District of Tondo:																		
Tondo Primary		188		76	1,241	3					117		1			38	58	1,722
Tondo Primary Branch																		
Yangco School (T. P. B.)		79		32	256				4		42					6	11	430
Gagalanging Primary		299		97	820				6		188					16	24	1,476
Magdalena Primary		101		1	147						58					31	13	351
Lico Primary		64		17	179						44					8	3	318
San Lazaro Primary		204		68	553	1			4	1	150		1			50	30	1,073
San Lazaro Primary Branch																		
Santa Clara Primary		333		82	644	1			40	1	205		1			77	23	1,414
Tondo Intermediate		293		48	1,000	9					143					35	55	1,583
Tondo Intermediate Branch																		

District of Sampaloc:																		
School of Commerce		48	4	26	72	1					13					6	1	171
San Sebastian Primary		301		3	319						27		1				32	683
San Sebastian Branch																		
R Hidalgo Primary		421		32	405				3		83					8	44	996
R. Hidalgo Primary Branch																		
Sampaloc Primary		373		5	697						61			9		30	62	1,237
Sampaloc Primary Branch																		
San Miguel Primary		44			49						4					6	14	117
Guipit Primary		205		26	194						77					3	13	526
Santa Mesa Primary		230		13	270	4					100					120	30	767
Sampaloc Intermediate		380		35	375	23					36		4		3	60	19	935
Sampaloc Intermediate Branch																		
District of Intramuros:																		
Ermita Training		40	3	5	148	9			18		16	1				16	13	268
Intramuros Primary	70		2	17	170	12	2		12		35		1			47	8	376
Malate Primary		53	5	6	156	12			7		24		2			31	3	298
Central School		7	6	17	78	13			8		3				1	18	15	166
Blind and Deaf		28	1	1	7	5	27		2					2		6	2	81
Normal School	21	98		4	145	75				5	21		1			206	3	579
Arts and Trades		58		2	54	26					17					171		328
Manila High		199			170	40					16		2			127	2	558
San Andres Primary		88	5	9	193	6			25		53					98	6	483
Ermita Intermediate		42			109	3			1		30		1			46	2	235
District of Paco:																		
Herran Primary	1	38		3	217	5			10		35					56	4	369
Herran Primary Branch		31		3	136	10			11		8		1.			29	2	231
Santa Ana Primary		28		2	415	11			7	2	61		1			58	8	593
Paco Primary		152	1	17	454	21	3		27		62		1			107	18	863
Paco Primary Branch																		
Pandakan Primary		21	5	8	141	8			15		35					42	1	276
Paco Intermediate		188		2	273	15			1	37			1			45	9	571
Paco Intermediate Branch																		
Total	94	6,482	58	966	12,784	319	34		224	50	2,423	1	19	11	4	1,774	843	26,084

With respect to the most important conditions the following percentages were found:

Trachoma and acute conjunctivitis	2.3
Trachoma alone	1.8
Skin parasitic diseases	1.1
Other eye affections	27.8
Tonsils, hypertophied	3.5
Dental caries	42.2
Tinea	8.9
Excluded (843 pupils)	3.1

With regard to trachoma, 3 schools, Arts and Trades School, Manila High School and Pandacan Primary School, were free from this disease, as against only 1 found free in the year 1916. During 1916, the average of trachoma infection in each school varied from 1 to 10 per cent whereas in 1917 the highest percentage only reached 6.8 per cent in San Miguel Primary School, where 8 cases were detected among 116 pupils examined. The lowest infection was in the Normal School in which 3 cases were found among 922 students. The percentage of trachoma infection by schools during 1917 varies from 0.3 per cent to 6.8 per cent, as follows: 11 schools with less than 1 per cent; 8 with 1 to less than 2 per cent; 10 with 2 per cent to less than 3 per cent; 7 with 3 per cent to less than 4 per cent and 1 with 6.8 per cent. In these figures each branch is included with its corresponding principal school.

This comparison shows a great improvement in the condition of the school children with regard to trachoma infection, a fact that can only be considered as the natural result of our work of inspection and care of the children affected with this troublesome disease. This accomplishment is the more remarkable when the limited resources and the insufficient personnel engaged in the work are taken into consideration. If more nurses were available so that the work could be extended to the homes of the pupils, the epidemic among the school children could be suppressed within a year.

The parasitic skin diseases also show a notable decrease as compared with the last yearly report.

The high percentage (23.8 per cent) of "other eye affections" may attract attention, but the matter is of less importance than it seems as these are simple and noncontagious diseases which are easily cured.

The percentage (43.2 per cent) of "dental caries" is important; it gives an idea of the lack of care from which the children have suffered during their first years of life, resulting in their teeth becoming damaged almost as fast as they grow.

This is a condition which seriously affects the health of the children, because of its influence on the physiological function of mastication which is an important preparation for good digestion; this, besides various mouth diseases and infections that may be due to the bad condition of the teeth. There were 12,888 pupils found with dental caries in 1916, against 11,784 found with the same defect in 1917, a small difference of 8.5 per cent in favor of 1917. This could be improved very much with the establishment of one or two more dental clinics and the provision of better facilities for home inspection and instruction to the mothers.

With regard to parasitic skin diseases, scabiosis, pediculosis (live pediculi) and favus gave a percentage a little over 0.3 per cent, though this percentage including other skin affections not specified amounted to 1.6 per cent. This is a great improvement compared with the deplorable conditions reported last year.

Only three cases of dangerous communicable diseases were found during the first examination among the school children, namely, 1 case of varicella and 2 cases of mumps.

Besides dental caries, there are among the common diseases, others like adenoids, hypertrophied tonsils, tubercular adenitis and tinea, which are in most cases due to some constitutional debility or to some organic diathesis which requires a long period of treatment and in many cases cannot be easily eliminated, though they do not mean a serious disturbance of the health nor are they of a dangerous character.

In general there is a great improvement of the conditions over the year 1916 and due credit should be given to Dr. A. C. Garton, previous medical inspector of schools, and also the school nurses for the faithful and efficient service rendered in the performance of their respective duties.

DIVISION OF SANITATION IN THE PROVINCES.

[Dr. Paul Clements, *Chief of Division.*]

Work for the extension of the organization of the municipalities into sanitary divisions was continued steadily, and with increased activity toward the end of the year. Much of the work done during the last six months of 1916 with a view of completing the organization of various provinces and making it effective was not crowned with entire success, only one province, Isabela, being added to the organized list in the early months of the year. Tarlac was organized at midyear and at the same time, Misamis, where two divisions were already in operation, completed its organization with a total of five divisions. Altogether the new organization secured was twelve sanitary divisions, four of which, comprising thirteen municipalities, were in Isabela, five, comprising sixteen municipalities, in Tarlac, and three, with ten municipalities, in Misamis. Of these thirty-nine municipalities, twenty-eight had previously had only a sanitary inspector. Of the twelve new divisions, the presidencies of ten are occupied by physicians, and of two by cirujanos ministrantes. The district health officer says of these latter that they accomplished more work of a sanitary character than do those who have a medical degree, as they are not distracted by the demands of private practice.

In Ambos Camarines, La Union, Oriental Negros, Pangasinan, Rizal, and Surigao the efforts at organization during the latter months of the year were successful to the extent that the organization was formally accepted by the provincial boards, the details as to its financial support being left for consideration during the preparation of provincial and municipal estimates at the beginning of 1918. Similar action was taken by the provincial boards of Abra, Ilocos Norte, and Ilocos Sur, after the close of the year but before this report was written, as one of the results of a trip of the Assistant Director of Health through these provinces. There remain then at this writing only six provinces, Bataan, Cavite, Laguna, Romblon, Samar, and Sorsogon, of the thirty-three to which the provisions of the law are applicable, in which nothing definite has been accomplished toward the organization.

Of the twenty-seven provinces in which the organization is already functioning, in only three provinces are there municipalities not included. One of these is Albay in which there are two small and isolated municipalities with no organization. Of ten such municipalities in Tayabas, one has already been included in an adjoining division, and it is expected to form seven of the remaining nine into two divisions shortly. The disorganized eight sanitary division of Nueva Ecija is also expected to be reorganized.

Besides the original appointments made in consequence of the organization of these provinces, there were fourteen new appointments made during the year to cover vacancies, nine of which were occasioned by resignation, and four by appointments of presidents of sanitary divisions to be surgeons or assistant surgeons in the Philippine Health Service, while one was occasioned by the transfer to the Philippine Constabulary of the officer detailed as district health officer of Zambales who had been acting as president of one of the sanitary divisions of that province in addition to his other duties. There were also three transfers of presidents of sanitary divisions from one province to another.

In Cebu and Zambales, presidents of sanitary divisions discharged the duties of district health officers during the greater part of the year, the Service being, on account of shortage of commissioned officers, unable to detail one to those provinces.

Considerable effort has been devoted during this year to the improvement of the service rendered by the sanitary division organization. Every opportunity arising in the course of official correspondence and in numerous personal interviews has been taken advantage of to impress upon the presidents of sanitary divisions an adequate sense of the importance of their work and of the necessity for faithful and intelligent performance of their duties, and assemblies of the local health officers at which representatives of the central office were present, were held in four provinces. At these assemblies the defects of the organization were plainly pointed out as well as the remedies necessary. On two of these occasions the Under Secretary of Public Instruction attended and his talks to the local health officers were of effective assistance.

The defects which have been noted in the local health services are due principally to lack of training and to inadequate facilities. A large majority of the men appointed as presidents of sanitary divisions are well meaning and intelligent, but have been educated as physicians merely, and not as public health workers, and the means of giving them the additional training necessary before sending them to their posts have been available in relatively few cases. In the more distant and less-cultured provinces it has frequently been difficult to get men for the positions at all. Manila, with its educational institutions, its social life, and its opportunities for distraction of various sorts exercises a centripetal attraction on the culture and intellect of the Islands, including the medical profession, which the centrifugal force represented by the offer of ill-paid appointments in remote localities is too feeble to overcome. Again the small salaries usually paid make it necessary for the local health officer to eke out a livelihood by engaging in professional practice, and there is a tendency both on the part of the health officers themselves and of the population among which they are located to regard this as the principal reason for their being, and health work, except in the presence of an epidemic, as something so secondary as almost to be lost sight of. Certain work which has been reduced to a standard routine is nearly always satisfactorily performed, this including vaccination and the handling of outbreaks of cholera and dysentery. This being the case, it appears that the most promising measure for the improvement of local health service would consist in standardizing and reducing to a routine as much of the work as possible, and then instructing the men, all in the same way, in this scheme of work. The preparation of the scheme is approximately completed, the details having been worked out by Passed Assistant Surgeon L. R. Thompson of the United States Public Health Service in the light of his large experience in epidemiologic surveys and consequent contact with numerous local health officers. It is intended to prepare a selected small number of the younger commissioned officers of the Service and send them into the field early in the year now beginning, each to take temporary charge of a sanitary division in which the plan will be placed in effect, the president of the division acting as assistant and receiving thorough instruction in its operation. In this way it is expected rapidly to introduce a uniform procedure in local health work all over the Islands. The details of the plan will be left for presentation in a future report in view of the probability of some modification when practically applied, but in essence it consists of the collection in advance by each local health officer of data which in past experience the epidemiologist has so often had to assemble after the advent of an epidemic, their presentation in a digested form, and their use in interpreting health conditions and indicating probable danger spots. When the local health officer is thus provided with an adequate grasp of his problem, the application of remedies, which can also be standardized to a considerable extent, to existing conditions can be made with much greater facility.

An indication that public health work is being more appreciated year by year is that even in the provinces the people, and especially their leaders, are beginning to demand more and better service of the local health organizations. There has been not a little criticism, sometimes advanced in excuse for not giving better financial support, but usually friendly and evidently put forth in a desire for improvement, and always instructive. In the way of coöperation from both people and officials in necessary health measures in the provinces, the Service has had every reason to be satisfied with the course of events during the year.

One does not hear so much of late of the idea that sanitary measures should be adapted to the customs of the people, formerly the shibboleth of those who, for any reason or no reason opposed any measure taken on behalf of the public health. The writer did hear it, however, on one occasion during the year, on the lips of a very respectable member of the medical profession of Manila. The fact is that sanitation is a science of recent development which arose because the customs and habits of most people both here and elsewhere all over the world were to a large extent objectionable from the standpoint of the conservation of life and health, and in need of correction, and that whenever and wherever customs and habits are in conflict with sanitary principles, it is the customs and habits, and not the principles which must ultimately give way, it is the customs and habits which must ultimately give way, it is the customs and habits which must be modified to conform to sanitary principles. This process is going on with perhaps greater rapidity in the Philippines than in any other country.

The financial support of the health organizations has not been quite satisfactory, though there has been some improvement in this respect. A majority of the municipalities in the organized provinces voted only the minimum allowed by law, viz., 5 per cent of their general funds, though some municipalities of Nueva Ecija voted 6 per cent, while there was an average rate of 6 per cent in Isabela, a uniform rate of 7 per cent in Bulacan and Zambales, and 8 per cent in Bohol. Several municipalities in Antique and one or two in Capiz voted the maximum of 10 per cent, as a majority could well have afforded to do. On the other hand nearly half of the organized provinces had to request authority for a reduction in the amount of the provincial contribution to the health fund, though it is believed that in each case the province concerned gave all that it could afford. An overdraft in the health fund of the subprovince of Catanduanes, originating in the heavy expenses of the cholera campaign of 1916 was still being carried at the end of 1917. For the same reason the province of Cebu was brought almost to the point of incurring an overdraft during 1917, but managed to get through the year without doing so. Small balances from previous years were exhausted during the year in Albay and Zambales, while comfortable balances are still on hand to the credit of the health funds of Batangas, Bohol, Bulacan, Leyte, and Pampanga. At last advice, the balance belonging to the health fund of Nueva Ecija, loaned to the road and bridge fund of the same province in 1916 under authority from His Excellency the Governor-General on the express condition that it should be repaid during 1917, was still unadjusted.

PROVINCIAL LABORATORIES.

Of the 38 provinces in this division, Albay, Ambos Camarines, Bohol, Batangas, Bulacan, Cebu, Ilocos Sur, Iloilo, Isabela, Laguna, Leyte, Nueva Ecija, Occidental Negros, Pampanga, Pangasinan, and Tayabas maintain bacteriological laboratories to perform all necessary bacteriological examinations of a routine nature. The provinces of Antique, Cagayan, La Union, Mindoro, Mountain Province, and Sorsogon have made appropriation of funds to establish provincial laboratories but it has not been possible to furnish the equipment because of the war. The rest of the provinces have not appropriated any funds for such purpose.

No bacteriologist is employed in the provincial laboratories. Part of the time of the district health officer is devoted to the laboratory work.

Twenty nine thousand sixty-five specimens were examined during the year principally for the diagnosis of communicable diseases and intestinal parasites.

The provincial laboratories are a big help to the provincial hospitals, also to the dispensaries and to sanitary instruction of the students of public health schools, in making an extended study of the prevalence of intestinal parasites among the people, and in prompt and early recognition of the presence of any communicable diseases in the province. In a general way the provincial laboratories facilitate the investigation work of the district health officers, make possible prompt diagnoses and control of communicable diseases, and where specially its advantage is to be valued is in the detection of carriers during epidemics. While during epidemics the laboratory can save time, money and lives, by securing the prompt control and disposition of cases, during normal times, with a systematized work in close relation with the work of the district health officer, it advantageously assists him in keeping thoroughly posted as to the local sanitary conditions and it specially serves as a warning for a contingent outburst of an epidemic by detecting either the first case or the carriers.

The laboratory also acts as a politico-social measure especially in cholera epidemics because the immediate bacteriological diagnosis of the first cholera case locates the carriers and quarantine is imposed upon only those persons who should be quarantined and thus the opposition of the people to the sanitary measures taken is reduced to the minimum. It may be emphatically stated that a provincial health organization cannot be considered complete without a provincial laboratory.

In spite of the shortage in the number of trained nurses available, two of the provinces organized into sanitary divisions, Bulacan and Occidental Negros, have been able to increase the number of nurses provided so as to have one for each division, ten in one case and eleven in the other, a net gain of ten nurses doing public health work in the provinces.

DANGEROUS COMMUNICABLE DISEASES.

Cholera again absorbed almost the entire health activities in about one-third of the provinces. It was present in a number of provinces at the beginning of the year. Of the provinces in Luzon in which this was the case, Cavite became clear in the latter part of January, 31 cases with 27 deaths having occurred in this month. In Albay and Sorsogon the infection smouldered for months with occassional local flare-ups. In Sorsogon, the end was not reached until September with a total of 1,055 cases and 541 deaths, occurring in 18 towns; while in Albay, the last case occurred in August, 19 of the 22 towns of the province having had cases to a total of 513, with 328 deaths. Meanwhile, in the latter part of April, the municipality of Caramoan of the neighboring province of Ambos Camarines, which had not been infected when that province was severely visited during the previous year was infected by a refuge family from Tabaco, Albay, and a small localized focus resulted, with 32 cases and 26 deaths, the last occurring after midyear. Two refugee cases from Oas, Albay, one of which was fatal, were also found in Nabua in June, but were prevented from originating any spread of the disease.

In the province of Rizal, 12 suspicious cases were reported during the year, one of which was fatal. These cases occurred singly, 6 of them in as many different towns, while the other 6, occurring in the town of Pasay, were scattered over as many months. (Only 3 of these cases were confirmed by laboratory methods, which were not applied in all the cases.) There were several contacts of the case which occurred in Pateros in May who were isolated for about three weeks, as they were at first found to be carriers while later a vibrio morphologically cholera but nonagglutinable was found in their stools.

In Limay, Bataan, a case which was suspicious occurred in July but no laboratory diagnosis was made.

From the Province of Bulacan, a leper who was sent from Norzagaray to San Lazaro Hospital in February was found to be carrier, but though a careful search was made, no further carriers could be found in the neighborhood from which he came. Two cases which are suspicious of cholera occurred in Baliwag in May and June, more than a month apart and in different barrios, but in both the laboratory tests were negative, as was the case with three suspicious cases in the province of Batangas, also widely separated in point of time, and two cases in Laguna. There was however one case in Laguna, in San Pablo in May, which was found positive by laboratory test, and two contacts of which were found to be carriers. This focus was promptly extinguished. One carrier found in Manila in the person of a resident of Batak, Ilocos Norte, completes the tale as regards the Island of Luzon.

In the Island of Marinduque, there was a small outbreak in the town of Torrijos beginning on March 20 which was extinguished by the end of the month in that town with 24 cases and 17 deaths, but which spread to the neighboring municipality of Santa Cruz where there occurred 47 cases with 40 deaths between April 1 and August 29. In the latter part of September there were two more cases in Santa Cruz and one in Torrijos, and at Christmas two more in Santa Cruz. All of these last five were fatal.

In Mindoro there was a small outbreak in Calapan in the last few days of 1916, with 9 cases and 8 deaths. In the municipality of Lubang which belongs to this province but is on a separate island an epidemic amounting to 77 cases and 12 deaths in May and June was reported. The Insular sanitary inspector who was sent to combat the outbreak was, however, of the opinion that it was a concurrent epidemic of cholera and dysentery and that a large majority of the cases were of the latter disease. A large proportion of the cases were among children of tender years. There were also two suspicious cases in San José which, in the opinion of the district health officer, were not cholera.

The brunt of the incidence of the disease was, however, borne during the year by the Visayan Islands. It was present at the beginning of the year, continuing from the year previous, in the three provinces of the Island of Panay, in the Occidental half of the Island of Negros, and in Samar and Leyte. Cases had occurred in Cebu in the last week of 1916, and continued almost throughout 1917, while the disease reappeared in Bohol in February, and Oriental Negros became infected about the middle of March.

Of the three Provinces of Panay, Antique suffered little in January, but there was a recrudescence in February involving five towns. The province was clear after March 9 until September 17 when a new case was reported in Sibalom. The infection spread to three other towns almost at once, and in two more in November. It should be mentioned that the towns which suffered most in the latter part of the year had had no cases during the early part, whereas those which had most cases in the first outbreak escaped during the second. This is well seen in the following table.

Municipality.	Number of cases by months.							
	Jan.	Feb.	March.	Sept.	Oct.	Nov.	Dec.	Total.
Bugasang	4	49	1					54
Culasi						5	5	10
Dao				7	29	17	13	66
Lauaan		16	4					20
San José	2			8	24	5	42	81
Patnongan		22	1			15	4	42
San Remigio				3		24	8	35
Sibalom	4	4		30	19	16	10	83
Valderrama		48	3					51
Total	10	139	9	48	72	82	82	442

In Capiz the disease reappeared twice after the province had been clear for two months the first time, and for four months the second time. The clear periods were from March 28 to June 2, and from August 1 to December 9. In all, 23 of the 30 municipalities were infected, with a total of 446 cases. In only 4 of these towns could the infection be considered at any time severe.

Iloilo became practically clear at the end of March, though two sporadic cases occurred on April 16, one in Iloilo and one in Sara, points widely separated and with no easy communication. The reappearance occurred in Guimbal on the last day of

June after which the province was not clear during the remainder of the year, though the incidence was light except in the month of November, when 218 of the total of 575 cases reported during the year were registered. Twenty-five municipalities were infected.

In Occidental Negros a few scattering cases were reported in January, embers of the dying epidemic of 1916, after which the province was clear until September 26 when cases occurred in Pontevedra and spread to the other towns of the province, all of which were infected except three. The epidemic was not extinguished until December during the last two days of which no cases occurred. The total incidence was 659 cases with 557 deaths.

In Cebu Province, in which the introduction of the disease had been successfully prevented during 1916 until the last week of the year, it was present almost throughout the year 1917, the period from November 8 to December 23 being clear. About two-thirds of the municipalities became infected, not however simultaneously nor in close succession. Three were infected in January and four more became so in February, then two in April, one in May, seven in June, as many more in July, five in August, and one each in September and October. Cebu city had cases in every month from February to October, while in most of the other towns the incidence of the cases was distributed over a period of one or two months only. In some towns there was more than one infected period, with clear intervals varying from one to six months. The total incidence was 938 cases with 511 deaths.

The proportion of territory infected was about the same in Samar as in Cebu, 26 of the 40 towns of Samar having cases, amounting to a total of 1,954, with 1,176 deaths. This province had only become seriously infected relatively late in 1916, and cases were being reported from nine towns at the beginning of the year, the other towns infected becoming so at intervals until September. The last three months of the year were clear.

Leyte was rather widely infected at the beginning of the year and continued to be so during almost the entire year. There was a clear period of something more than a month in April and May after which there was a reappearance which attained considerable severity in several towns in July and August, notably in that of Ormoc in the latter month. In September there were only a few sporadic cases outside of Ormoc, which also became clear toward the end of the month, the last case being reported on the 22d. No further cases occurred until

November when there was a small localized outbreak in Hindang, speedily suppressed, and a few cases in three other towns. In the month of December only four cases were reported, all from Baybay, the last occurring on the 14th. In all, 31 municipalities reported cases totaling 1,575 with 1,098 deaths.

In Bohol, which had had a slight outbreak during the previous year but was clear at the beginning of 1917, the disease again appeared late in February in Candijay whence it spread to four other towns in sequence along the main lines of travel. In April there was a clear period of three weeks, the new appearance occurring in a sixth town, Loon, after which it was not eradicated from the province as a whole during the remainder of the year. Only 6 of the 34 municipalities escaped, and 3 remained infected at the end of the year. In this province there were 1,243 cases and 859 deaths.

Oriental Negros was one of the three southern provinces which had escaped infection during the previous year though in frequent communication by sea with Occidental Negros and Iloilo. About the middle of March there was a small outbreak at Larena, capital of the subprovince of Siquijor formed of the separate island of the same name. This outbreak was readily controlled, but somewhat later the disease appeared in Dumaguete and thence spread to the southern end of the main province, including the next town north of Dumaguete. In this part of the province the epidemic practically terminated in July. It was now, however, spreading toward the north where all but two of the towns were successively infected in geographical order. In Bais, though infected several times, the disease became epidemic only in November.

As this province had no general health organization, and almost no local organization outside of three towns, it was necessary to send a party of Insular sanitary inspectors, who remained in the province for about three months, to its assistance. Under the general supervision of the district health officer, each of these inspectors was assigned the management of the campaign in one locality and the direction and instruction of the untrained personnel provided by the municipality, becoming for the time being virtually a local health officer. In Samar, it was necessary to keep Insular sanitary inspectors in the province for almost the entire year for the same reason of lack of local organization, and in Sorsogon, Bohol, and Leyte for shorter periods.

The epidemic did not begin in the towns simultaneously and its march has not been entirely uniform throughout the provinces. The majority of the cases were widely separated and practically all occurred in the barrios where communication was difficult and this is one of the reasons why the epidemic persisted for a long time.

The chief measures taken for controlling the epidemic consisted in complete isolation of the cases in the emergency hospitals or at their homes, systematic disinfection of all the houses located in the infected zone, proper and safe disposal of human waste by the installation of Antipolo systems, daily examination of the dead, observation and bacteriological examination of the contacts, education of the masses in regard to how the disease spreads, how it may be contracted and how it may be avoided.

The sale of raw vegetables, cooked food-stuffs, and tuba was prohibited and complete quarantine of infected houses instituted.

The assistance of the Philippine Constabulary for maintenance of quarantine was required in some provinces, contributing in a great measure to controlling the epidemic.

No doubt the best method to control the cholera infection is to get the first case isolated properly and seek the carriers, and the provincial laboratories were the principal means for this purpose. Also the establishment of temporary emergency hospitals in the infected place, with a detention camp for carriers, made it much easier to handle this disease.

The presence of carriers among the population is the chief fact that must be ascertained in a campaign against cholera. As soon as the first case is known, it is then necessary to find the carriers.

In the campaign against cholera in the province of Cebu this theory was confirmed. The district health officer of Cebu, in his annual report, said about the carriers:

> By the percentage of carriers found we can determine if the place infected is a real focus or a mere accidental infection as soon as the first few cases are registered.
>
> If the locality is infected and the percentage of carriers is found to be as high as 50 per cent of the population, the infection is a severe one.
>
> If the percentage amounts to only 25 per cent or 30 per cent the infection is declining.
>
> In a place where no case has been reported but where as high as 25 per cent to 30 per cent of the population are found to be carriers, radical steps must at once be taken, for where this has not been done, it has usually been observed that it is only a short time before actual cases are reported.

One thousand two hundred and sixty-one cases and seven hundred and sixty-four deaths were registered.

A consideration of the total number of cases registered in connection with the large extent of the area infected and the long period during which the infection was present will at once show that in the large majority of localities the disease did not reach epidemic proportion. In previous years, the appearance of a case of cholera in a locality has usually been followed promptly by other cases in the immediate neighborhood, the incidence curve showing a relatively sharp rise for several days, then a maximum period followed by a decline much more gradual than the rise and then finally a return to normal conditions. This incidence curve is so typical that the writer has often, after its study, and consideration of the local conditions and of the efficiency with which the control measures were carried out, predicted the termination of an outbreak in a given locality with the same confidence with which the physician predicts the return of the temperature to normal in a case of typhoid or pneumonia. Such a curve of local incidence was still frequently presented during 1917, especially in Samar and Oriental Negros, but it was so much more often the case as to be characteristic of the year, that the number of cases reported in a given municipality during twenty-four hours were in almost as many different barrios which on the morrow would have no cases to report while new cases occurred in entirely distinct neighborhoods.

The typical incidence curve usually follows the importation of a virulent case into a previously infected locality, while the type of incidence last mentioned is as if there was a previous widespread latent infection, i. e., of carriers, some of which, from causes which we do not yet entirely understand, develop into cases.

The multiplication of infected points made much harder work of the measures necessary for control than is the case where the disease is focalized within a small area, and great credit is due to the district health officers as a whole for their having prevented a large majority of these sporadic cases from becoming centers of spread of the disease. Wherever an outbreak assumed the proportions of a local epidemic, and personnel was available, an emergency hospital was established, and with the same good effect as had attended this measure during the previous year. In Leyte and Sorsogon hospitals were carried on in various localities for short periods. In Oriental Negros, the personnel available was limited to a physician, a trained nurse and a graduate midwife who was pressed into the service as a nurse. These were organized, with small amount of equipment, into what may be called a flying hospital squad, and were in the thick of the fight for several months, moving from town to town as the local epidemics waxed and waned, usually occupying a school building loaned temporarily by the Bureau of Education, and accomplishing an immense amount of good.

The epidemic was most extensive among the poor in barrios where the water supply was very deficient and where the people obtained their water for drinking purposes from insanitary surface wells and oftentimes from rivers or brooks.

The pest of flies which prevailed during the months from April to September, particularly around the houses and pits used as water-closets, in association with the filthy habits and indifference of some persons, facilitated the spread of the disease. The people take no precaution to prevent flies from gaining access to the pits and to food. Visiting the sick and assisting in caring for them is the custom in all towns, and germs of disease are thereby spread by contact to other persons and places.

Another cause of propagation was the fact that on account of the difficulty of communication between barrios many persons are infected long before the news thereof reaches the sanitary authorities so that sanitary measures cannot be taken early.

The treatment which has given the most satisfactory results to carriers was the aromatic sulphuric acid, 15 drops in a cup of water at least once a day, administered to each person within the infected area.

The mortality was very high, this was due principally to the fact that the people hide some cases and report them only when they have already succumbed from the disease. The mortality among the hospitalized was 40 per cent less than among those not hospitalized.

Certainly the sanitary education of the people by means of lectures, exhibitions, etc., would prevent the continuation of any epidemic of dangerous communicable diseases, but this procedure requires a very long time, meanwhile many lives would be lost.

Local authorities and the public in general should understand that the principal and the most efficient measure which must be taken to have cholera disappear in the Philippine Islands is to adopt a good method of disposal of excrement. The Antipolo system fills this purpose in all respects as its simplicity and cheapness put it within the reach of everyone.

On the day that this system is generalized throughout the Archipelago, cholera will disappear and the city of Manila will not be exposed to continual infection by persons arriving from the provinces.

TYPHOID.

The information regarding this disease is almost too incomplete to be discussed. No epidemics have been reported although in a rapid survey of Pasig for the purpose of obtaining data for a comparison of conditions in that municipality two years after the visit of the sanitary commission with conditions existing at the time of their visit it was found that in the early part of the year there had been eleven deaths within three months, probably indicating a small localized outbreak which had not at the time attracted attention. On the other hand, the disease was registered in most of the provinces, though five of the district health officers do not even mention it in their reports, and in practically all of the others very few except the fatal cases came to the notice of the health officer, due to the fact that in most cases of even fatal illness medical attendance was not had, only a very small proportion of the sick calling a physician. It must be remembered also, that there are still many municipalities, in fact a considerable majority, in which there is no physician residing and in which the diagnoses of causes of death are made by laymen from such descriptions of the disease as can be given by the member of the family or neighbor who applies for the burial permit. Such diagnoses are manifestly unreliable. This condition exists even in towns which form parts of sanitary divisions as it is not possible for the local health officer in addition to his other duties to investigate personally every death which occurs in his often too large division. This lack of reliability in diagnoses may, of course, work both ways, but the balance of probability is in favor of a considerable underreporting of deaths from typhoid. The highest rates reported were 100 deaths per hundred thousand of estimated population in Sorsogon and 78 per hundred thousand in Bulacan, while in most of the provinces reporting the rate ran under 30 per hundred thousand. It is not believed that the proportion usually assumed in the United States as between cases and deaths, viz., ten to one, will hold in the Philippines where so many of the firmly rooted customs observed in caring for the sick are diametrically opposed to the principles of good nursing.

DYSENTERY.

This is the disease which, in the Philippines, shows the most marked seasonal prevalence, coinciding roughly with the rainy season, from June to September. The provinces most seriously affected during 1917 were Occidental Negros and Ilocos Norte, while there were localized outbreaks in Ilocos Sur, La Union, Bulacan, Nueva Ecija, and Samar. While there were very few localities entirely free throughout the year, it nowhere in the remaining provinces assumed the character of even a local epidemic, though an increase of cases was practically always noted during the wet months. In Occidental Negros, dysentery was the largest single factor in the total mortality of the province for the year, though there was an outbreak cholera, while in Ilocos Norte only malaria was of more importance. With the exception of quarantine which is not ordinarily instituted for dysentery, the measures taken for its control were identical with those used against cholera.

MEASLES.

This disease is reported as having been prevalent in Cagayan and Isabela, having been the cause of 86 deaths in the latter province, while the district health officer states his belief that it was responsible also for a proportion of the deaths recorded as dysentery, due to a failure to distinguish between the latter disease and an enteritis occurring as a complication of measles. Localized outbreaks were reported from Nueva Ecija and Palawan. In four provinces the prevalence of the disease was noted but it is stated that no mortality occurred, while the mortality figures given in several reports without comment indicate a considerable incidence. In this class are Occidental Negros with 58 deaths; Pangasinan, 55; Capiz, 54; Pampanga, 30; and Batangas, 27.

MALARIA.

This disease occupies the first place as a cause of mortality in all provinces. None of the provinces of the Philippine Archipelago are free from malaria. The lack of urbanization of the towns, especially the barrios, makes malaria the most extensively prevalent disease in the Philippine Islands.

Many of the places where the mosquito survey was made were low or flat areas of a marshy character, and were found to be prolific sources of mosquitoes due to the stagnation of rainwater which had collected in the low places.

The disease is most prevalent at the beginning and end of the rainy season. In the Visayan region it is especially prevalent during the months of October, November, and December, and in Luzon during the months of May, June, October, November and December.

The custom of the people of the barrios of sleeping unprotected from the bites of the mosquitoes makes the spread of the disease easy.

Lectures on the necessity and the methods of preventing the breeding of mosquitoes, and recommending the use of mosquito nets, the filling in of low lands underneath and around the houses, proper drainage, the cleansing of water receptacles, emptying of all cans, and the furnishing of quinine to cases of malaria, were the measures taken in the provinces against this disease. Pamphlets on malaria were written and translated into the local dialects and distributed among the people, but only little improvement has been obtained. The peculiar geographical and topographical situation of the towns and barrios and the limited amounts of funds that the municipalities appropriated for permanent sanitary work made the results obtained very inadequate.

WHOOPING COUGH.

Pertussis is more prevalent in the provinces than is generally believed. Approximately 1,100 cases were registered in the provinces this year, and in Leyte and Oriental Negros it assumed the character of a real epidemic, resulting in 228 deaths in the former province and 230 in the latter.

People do not pay a great deal of attention to this disease and cases are frequently found among the school children and among those who come to the public dispensaries asking for medicines.

DIPHTHERIA.

Only 26 deaths from diphtheria were registered during the year in all the provinces belonging to this division. These deaths occurred in several provinces, but not in sufficient numbers to become epidemic.

SMALLPOX.

Only nine deaths by smallpox were reported during the year. These occurred in the provinces of Union (4), Occidental Negros (4), and Pangasinan (1). However, report from the province of Samar has not yet been received, and it is known that smallpox was considered endemic in the east side of said province, especially in the towns of Borongan, Sulat, San Julian, Llorente, and Oras, and in the towns of Balingiga in the south and Catubig in the center.

The great difficulty in transportation facilities between these municipalities and the rest of the island made it wholly impossible to furnish fresh vaccine for the immunization of the inhabitants of said towns, and for this reason the disease can not be completely eradicated. As soon as the road from Catbalogan to Wright and Taft can be utilized, a more extensive vaccination will be performed and one of the endemic points of smallpox infection in the Islands thereby destroyed.

TUBERCULOSIS.

Tuberculosis occupies the second place among the causes of mortality in the Philippine Islands. According to records, 15,595 deaths were registered from malaria and 9,692 (incomplete reports) from tuberculosis.

In some of the provinces the number of deaths from tuberculosis was greater than from the most virulent epidemic. In all the provinces and in all the towns there are registered many cases of tuberculosis and also many deaths, both infants and adults.

The habit of promiscuous spitting, of living with the sick, of using a common drinking cup, carelessness, lack of proper diet, and the notion that people have, considering it an offense to isolate a tuberculous patient from the rest of the family, all facilitate the transmission of the infection from one person to another.

The public clinics established by the Antituberculosis Society in several provinces are doing a meritorious work in the saving of lives in those provinces; but only by the establishing of a great number of sanatoriums or public clinics, in addition to an extensive educational campaign on tuberculosis, will it be possible for years to come to begin to cause a decrease in the number of deaths resulting from tuberculosis.

DISCUSSION.

It is true that if we compare the figures of the total mortality that resulted from communicable diseases during the present year with the mortality registered during the past five years there will be found a notable dimunition, but not to such an extent as to give the assurance that maximum efficiency in sanitation has been attained.

The mortality resulting from diseases which could be called avoidable is approximately 30 per cent of the total mortality, but this percentage was greater before the reorganization of the sanitary organizations of the provinces. The sanitary organizations have made considerable progress in the sanitation of the provinces, although not as yet reaching the desired end.

The difficulty is that the health fund at the disposal of a province is not sufficient to carry out satisfactorily all the services required by modern sanitation, and most important of all, to carry out measures to prevent the outbreak of epidemics. In fact, the majority of the provinces have only one doctor for three or four municipalities and one sanitary inspector for each town, and sometimes one for two towns.

In order to control an epidemic in its origin it is necessary to have knowledge of the first case, to watch it, and to prevent its being communicated by any person or object capable of transmitting the disease, and if this is not possible, to destroy the germ of infection in the contacts or fomites.

To carry out this simple measure it is necessary that one person devote all his time to it, but at present this is not the case. The doctor and the sanitary inspector should have their regular office hours to examine corpses, issue proper death certificates, attend urgent calls, hold local consultations, carry out the administrative business, and inspect tiendas, markets, and foods, etc., and with all these duties, if one town is properly attended the others must be neglected, and at times it is practicably impossible to visit the barrios.

RABIES.

In accordance with the provisions of Act. No. 2461, the Rabies Law of the year 1917 was continued. In 1916 the district health officers of the Provinces of Albay, Ambos Camarines, Bataan, Bulacan, Cagayan, Cavite, Capiz, Ilocos Sur, Iloilo, Isabela, Laguna, La Union, Leyte, Occidental Negros, Pampanga, Pangasinan, Rizal, Tarlac, and Tayabas presented ordinances to the municipal councils compelling the muzzling of dogs and permitting the poisoning of dogs running at large. A majority of the municipal councils rejected this ordinance on the ground that such sanitary measures were very unpopular with the people, only providing for the poisoning of dogs.

As a result of this, Albay Province poisoned 9,220 dogs. In this province 2 persons were bitten by suspected rabid dogs, and by the prompt administering of prophylactic treatment both were saved. Ambos Camarines reported 2 persons bitten by rabid dogs and Bulacan Province 3, all of whom were saved by the prompt administration of prophylactic treatment. Antique and Bohol Provinces registered 1 death each resulting from rabies.

In Bulacan Province the municipal councils disapproved the regulations for enforcing the muzzling of dogs, on the ground that they were unable to secure persons for the purpose of apprehending stray dogs as persons so engaged feared reprisals. The suggestion of poisoning all stray dogs was also rejected as unpopular.

In Cagayan Province no deaths were reported from rabies, though of the several persons reported bitten, only one received prophylactive treatment. Approximately 2,000 dogs were poisoned at the time the persons were bitten.

Iloilo Province reported 9 cases and 7 deaths from rabies; also 20 prophylactic treatments were administered to other persons bitten by suspected rabid dogs. Eight municipalities passed the muzzling regulations.

Ilocos Norte Province reported 27 persons bitten by suspected rabid dogs with no deaths, 21 persons receiving antirabic treatment. Municipal ordinances enforcing the muzzling of dogs were passed by all the municipalities except two.

Laguna Province reported 5 deaths from rabies, of which 3 were not reported until after death and one person died after receiving one injection of prophylactic treatment; 15 other persons were bitten by suspected but not confirmed rabid dogs and successfully treated with prophylactic injections. Regulations against rabid dogs were not approved by the local authorities.

In La Union Province 3 persons bitten by rabid dogs were saved by prophylactic treatment; 453 dogs were poisoned; and the municipal councils passed muzzling regulations.

Occidental Negros reported 1 death from rabies and 6,149 dogs were poisoned. Oriental Negros reported 6 cases of rabies with no deaths and 4 cases cured by prophylactic treatment.

Pampanga Province reported 6 cases of rabies, with 2 deaths and 4 successful prophylactic treatments. The dog muzzling regulations were not approved in this province for the reason that "a dog muzzled or tied is not able to guard a house or yard."

Pangasinan Province was furnished with 11 prophylactic treatments, and reported 7 deaths from rabies. The local authorities were indifferent to, and the people were opposed to the enforcement of antirabic measures.

Nueva Ecija Province registered 35 persons bitten by rabid dogs with 4 deaths. Sorsogon Province registered 5 persons bitten by rabid dogs, and Rizal, Tarlac, and Tayabas 2 each; 872 dogs were poisoned in Sorsogon Province and 5,000 in Tayabas Province.

In résumé, during the year the provinces were furnished 115 prophylactic treatments, with the result that no deaths were registered of persons who received a complete treatment. 51 persons died from rabies of whom 23 received prophylactic treatment too late. More than 22,000 dogs were poisoned.

In general the regulations recommended by this office against rabies were not accepted by the municipal authorities for fear of losing popularity, and that the adoption of such measures would interfere with the custom of the people of the barrios to use dogs as guards.

BERIBERI.

Reports from district health officers show that beriberi has considerably increased among children and decreased among adults.

The increase of beriberi among children may possibly be due to the inferior quality of the mothers' diet, caused by war conditions; but it may also be due to the fact that, the attention of the local sanitary employees having been called to the excessive number of deaths diagnosed as "convulsions" last year, they have diagnosed many of such cases as beriberi this year.

The decrease in the percentage of deaths from beriberi among adults is probably due to the large extension of home gardens established in the provinces which made possible a more completely balanced diet which improved the physiological condition of the adults and rendered them less susceptible to the disease.

VACCINATION.

Vaccination was performed by the sanitary inspectors during the first six months of the year as follows:

Albay	113,295	Mindoro	1,017
Ambos Camarines	45,564	Mountain Province	1,321
Antique	11,340	Nueva Ecija	3,113
Batangas	54,693	Nueva Vizcaya	5,511
Bohol	14,994	Oriental Negros	16,705
Bulacan	42,239	Occidental Negros	14,016
Cagayan	15,149	Pampanga	43,212
Capiz	27,632	Pangasinan	97,273
Cebu	31,499	Palawan	842
Iloilo	29,406	Rizal	22,624
Ilocos Norte	35,669	Bataan	5,376
Ilocos Sur	41,435	Cavite	16,795
La Union	39,717	Samar	24,842
Leyte	No report.	Sorsogon	2,515
Laguna	26.232	Tarlac	22,320
Tayabas	23,223	Isabela	6,139
Zambales	3,130		

Fifty per cent of the vaccinations performed in those provinces in which the means of communication are regular resulted positive, but in the others only 20 per cent to 30 per cent were positive.

It appears from the reports of the district health officers that while there is a rather high birth rate, the number of vaccinations of persons who have never been vaccinated is relatively very small, so that it may be suspected that many children have not yet been vaccinated, especially those born from six months to seven years ago, and who have not yet entered school. District health officers will be directed in the next year to make a systematic vaccination of all of them.

WATER SUPPLIES.

Five sources of water supply are used either for drinking or domestic purposes by the people of the Islands, namely, in the order of their importance: artesian wells, rain water, springs, rivers, and surface wells.

The use of artesian water is now so general that only in remote places, or in places where there are no artesian wells, do the people use other sources of water supply. Drilling machines are constantly at work during the entire year in the provinces, and the demand for additional artesian wells is far from being satisfied. The municipal councils have shown a spirit of liberality in setting aside funds for the drilling of such wells. Artesian wells are an important adjunct to the conservation of health, and by the use of good and potable water for drinking purposes many preventable diseases will pass out of history. An example of this assertion was brought out in a recent cholera epidemic: "Moalbual," said the district health officer of Cebu, "was infected with cholera during the last part of the year when there was no provision for water supply. The people then used to take their drinking water from surface wells only; but after a water system was installed supplying good potable water, though surrounded by neighboring infected towns, it did not have a single case of cholera."

The district health officer of Batangas also affirms that no cases of cholera occurred in the formerly endemic area between Lipa and Rosario after four artesian wells were drilled in the various parts of his province, where before this time cholera had appeared every year.

One hundred and eight artesian wells were drilled during the year, making a total of 1,367 in the provinces included in this division at the end of the year, according to the records.

Approximately 30 per cent of the total population of the provinces embraced by this division had this kind of water supply. The province of Pampanga has the greatest number of artesian wells and Zambales the fewest.

Antique, Cagayan, and Isabela are the only provinces that use surface wells and rivers as a water supply.

Surface wells are commonly made in the banks of rivers; they are very shallow and the water filtered in them is constantly renewed.

Other surface wells are larger and deeper and protected with stone, dry stone or baked clay, but they are not covered. In several municipalities sanitary surface wells have been constructed, protected with concrete, closed, and furnished with a hand pump for drawing water.

The Mountain Province and the Province of Nueva Vizcaya use spring water for drinking and domestic purposes, except the municipality of Tagudin in the subprovince of Amburayan, which has artesian wells. Most of the towns and townships in these last two provinces have reservoirs and springs in the mountains, far from the towns, the water of which is conducted to the towns through pipe lines from which it is distributed by means of hydrants placed at convenient points on the principal streets.

In other provinces, as Samar and Capiz, the water is collected during the rainy season and kept in galvanized-iron tanks from which it is distributed or sold by the municipalities to the people in the dry season.

Three gravity water supply systems were established during the year: One in Calapan, Mindoro; one in Isla de Siquijor, Oriental Negros; and one in Bani, Pangasinan. In Pasig, Rizal, there is one under construction.

The province of Antique has funds ready for the establishment of a gravity water-supply system in the capital (San José de Buenavista), and the spring known as Pablayan is to be utilized for this purpose. Also Bohol has made an appropriation for the construction of a gravity water supply system at Jagna.

The following tabulation shows by provinces the number of artesian wells, gravity systems, and hydrants, and the estimated percentage of population in the Islands who use satisfactory water for drinking and domestic purposes. The reports are not complete.

Province.	Artesian wells.			Other systems.		Population using satisfactory water supply.
	Number in 1916.	Drilled in 1917.	Total.	Gravity.	Hydran.	
						Per cent.
Albay	22	3	25	--------	--------	30
Ambos Camarines	49	3	52	--------	--------	50
Antique	--------	--------	--------	--------	--------	--------
Batangas	99	9	103	--------	--------	52
Bohol	26	--------	26	--------	--------	48
Bulacan	165	13	178	--------	--------	60
Cebu	52	8	60	5	59	70
Cagayan	--------	--------	--------	--------	--------	--------
Capiz	65	14	79	--------	--------	35
Ilocos Norte	--------	3	--------	--------	--------	15
Ilocos Sur	--------	--------	--------	1	--------	15
Iloilo	27	--------	27	--------	--------	10
Isabela	--------	--------	--------	--------	--------	--------
Laguna	111	5	116	--------	--------	30
La Union	3	--------	3	--------	1	6
Leyte	--------	4	--------	--------	--------	--------
Mindoro	4	4	8	1	--------	10
Mountain Province	--------	--------	--------	--------	--------	--------
Nueva Ecija	70	3	73	--------	--------	47
Nueva Vizcaya	--------	--------	--------	--------	--------	--------
Occidental Negros	78	16	194	--------	--------	30
Oriental Negros	--------	3	3	1	--------	5
Pampanga	267	4	271	--------	--------	25
Pangasinan	66	13	79	1	--------	30
Samar	2	--------	2	1	--------	5
Sorsogon	37	3	40	1	--------	15
Bataan	117	4	121	--------	--------	60
Cavite	52	4	56	--------	--------	20
Rizal	111	11	133	--------	--------	40
Tarlac	69	9	76	--------	--------	25
Tayabas	5	5	10	--------	--------	10
Zambales	--------	--------	2	1	--------	20

MARKETS.

According to the reports submitted by the district health officers 23 concrete markets were constructed during the year in the provinces of Antique, Batangas, Ilocos Sur, Nueva Ecija, Sorsogon, Bulacan, and Laguna, Batangas occupying first place with 7 constructed during the year. The total number of concrete markets at the end of the year was 155, some of which are inclosed by fences, while others have only concrete floor, wooden or concrete posts, and iron roof, but without fences. The markets in the Provinces of Cagayan, Isabela, and Negros Oriental are all of bamboo, and there are no appropriations for replacing them with concrete buildings.

In general all modern concrete markets in the provinces are kept in sanitary condition and practically all the municipalities have regulations relative to sanitary maintenance. Market venders are required to keep their perishable and easily contaminated foodstuffs covered by the use of screens made of *sinamay* or wire netting. In the Province of Bulacan foodstuffs are put in cupboards with glass fronts and the bakeries and confectionaries keep their products in glass cases so as to avoid contamination from flies and dirt. They are also required in the tiendas in the markets to provide forks, spoons, and knives and a sufficient number of drinking glasses. Fingering of foods is prohibited. Tuba and drinking water are placed in proper receptacles with faucets. Markets are also provided with spittoons and garbage cans. "Barrenderos" and sweepers are usually employed by the municipality and they are under the control of the municipal treasurer. They keep the markets clean and free from garbage. The bamboo and nipa markets are without concrete floor, there are no tables or seats provided for the venders, and due to their structural defects they are far from being satisfactory, although an effort is made by the district health officers to keep them sanitary. In the rainy season the floors of these markets are always damp and hard to clean.

CEMETERIES.

Eighty-one cemeteries were opened or reopened, and forty-two closed during the year.

Splendid work has been done in some provinces in connection with cemeteries. Flowers, paths, and properly numbered headboards and good fencing were improvements made, especially in the Province of Albay, and particularly in the Roman Catholic cemetery in the town of Quingua, Bulacan Province, where the parish priest maintains his cemetery like a beautiful garden.

But in other cemeteries, many of which are municipal, the grass is overgrown, the fences broken in many instances, and gates are sometimes lacking, making it a place for pasturing of carabaos, horses and goats.

MEDICAL INSPECTION OF SCHOOLS.

Work in this connection was done in all the provinces of the Islands except in Ambos Camarines, Antique, Ilocos Norte, Ilocos Sur, Isabela, Negros Oriental, Pampanga, Sorsogon, Bataan, and Samar. About 1,360 schools and 190,000 pupils were physically examined during the year 1917.

With the means at hand, small possibilities are left for extending school inspection work. If the general funds of the provinces would permit the detail of sufficient personnel for the medical inspection of schools, the work might be done in a more systematic and regular manner. With the establishment of public dispensaries in barrios and towns the health of the school children may be more easily preserved than is now the case.

The medical inspection of school children in the Province of Cebu was discontinued because the doctors and nurses had to be employed in the suppression of cholera which was prevalent in that province.

Also, due to lack of personnel, medical inspection of schools could not be carried out in the Provinces of Ambos Camarines, Antique, Ilocos Norte, Mindoro, and Bataan.

The Province of Albay employ a dentist and pays his salary from the health fund. Two thousand and twenty-four pupils were examined, 869 treated, and 352 had teeth extracted.

Of the 190,000 children examined 60 per cent suffered from dental caries, 15 per cent from hypertrophied tonsils, and 20 per cent from scabies. Other affections found, in the order of their importance, were, pediculosis, especially among the girls, tinea, and conjunctivitis.

Generally speaking the sanitary conditions of the schools were found to be very good. The school yards were drained and many of the surfaces are of gravel or are somewhat rocky and drain quickly. Some few are muddy during the wet or rainy season.

With very few exceptions schools are not provided with sanitary convenience stations. The children attend to their physiological necessities in the land adjacent to the schools and the surface pollution is a source of danger to the health of the pupils. The district health officer of Bohol has found hookworm present in some schools which may be due to the fact that the pupils do not wear shoes and may be infected from the soil pollution.

At the present time, when the Philippine Health Service has undertaken a vigorous campaign to extend throughout the Islands the sanitary disposition of excreta, it would be desirable that no public buildings, especially schools, be built without a sanitary closet. The Antipolo system is not too expensive to be installed in any school; while the "Imhoff" or septic tank is more difficult to adopt as it requires a great deal of water and its construction is expensive.

According to the reports of the district health officers, many varieties of desks and seats were observed in use in the public schools. In some barrio schools neither desks nor benches were provided and the children sit on hard wooden floors which is a very uncomfortable position for the pupils. These uncomfortable seats and desks are the cause of many deformities existing among the school children, many of whom are partially, if not entirely humpbacked.

The placing of the blackboards is another subject of criticism in the reports. They are frequently either placed too high or too low, causing much eye strain and much muscular fatigue.

WASTE DISPOSAL.

The campaign for the introduction into the provinces of the sanitary disposal of excreta was continued during the present year and great progress was secured.

The municipal ordinance requiring the "Antipolo system" as a minimum provision for the disposal of human wastes has already been approved in 192 municipalities against 42 at the end of 1916.

The number of installations for the sanitary disposal of excreta, including flush closets and Antipolo systems reported in 1916 was 6,943. According to the report of the district health officers, this number had increased to 37,257 by the end of 1917, of which 36,314 were "Antipolo systems."

When a fiesta is celebrated by either a municipality or barrio provisional convenience stations are established, more than 20,000 such stations having been established during the year.

The data collected from the municipalities of the provinces embraced by this division show that in sanitary disposal of excreta in the provinces great progress has been made and the people are taking much interest and are actively coöperating in the solution of one of the most important problems of public sanitation.

If the increase in the establishment of sanitary systems continues at the same rate as in 1917 in a few years practically all the people living in towns and large barrios will have a sanitary method of disposal of excreta.

SANITARY ORDINANCES, SANITARY ORDERS ISSUED, AND PERSONS PROSECUTED.

Sanitary ordinances covering the following points were submitted to the municipal councils of the Islands:

(*a*) Disposal of excreta by Antipolo system or septic tanks.

(*b*) Collection of garbage.

(*c*) Care of domestic animals.

(*d*) Licenses for the muzzling of dogs.

(*e*) Regulation of prostitution and dance halls.

(*f*) Protection of foods and drinks.

(*g*) Sanitary handling of drinking water from the source of supply.

(*h*) Prevention of nuisances and regulation of offensive trades.

(*i*) Civil registration of marriages, births and deaths.

(*j*) Sale of milk, and slaughter permits.

(*k*) Notification and control of communicable diseases.

These ordinances were approved in the following provinces:

(*a*) Albay.
Antique.
Bantangas.
Bohol.
Bulacan.
Cebu.
Iloilo.
La Union.
Leyte.
Mindoro.
Nueva Ecija.
Nueva Vizcaya.
Occidental Negros.
Pangasinan.
Rizal.
Tarlac.
Tayabas.
Zambales.

(*b*) Bohol.
Bulacan.
Cagayan.
Cebu.
Iloilo.
Occidental Negos.
Pangasinan.
Tayabas.

(*c*) Cebu.
Iloilo.
Pangasinan.

(*d*) Albay.
Antique.
Iloilo.
La Union.
Pangasinan.

(*e*) Albay.
Bulacan.
Cebu.
Iloilo.
Leyte.
Mindoro.

(*f*) Albay.
Batangas.
Bohol.
Bulacan.
Cagayan.
Cebu.
Capiz.
Ilocos Norte.
Iloilo.
La Union.
Leyte.
Mindoro.
Nueva Ecija.
Nueva Vizcaya.
Pangasinan.
Sorsogon.
Rizal.
Tarlac.
Tayabas.
Zambales.

(*g*) Albay.
Bohol.
Bulacan.
Cebu.
Iloilo.
Pangasinan.

(*h*) Antique.
Bulacan.
Cebu.
Pangasinan.

(*i*) Bulacan.
Cebu.
Leyte.
Mindoro.
Pangasinan.
Tarlac.
Tayabas.
Zambales.

(*j*) Bulacan.
Cebu.
Iloilo.
Leyte.
Pangasinan.

(*k*) Bohol.
Bulacan.
Cebu.
Ilocos Norte.
Iloilo.
Pangasinan.
Sorsogon.
Tarlac.
Tayabas.
Zambales.

These ordinances were not approved in all of the municipalities of the provinces mentioned, but in some only. In the Province of Bulacan, by Resolution No. 502 of the provincial board and in accordance with the opinion of the provincial fiscal and the provisions of section 2008 of the Revised Administrative Code, the municipal ordinance (*a*) referring to the disposal of excreta by Antipolo or septic tank systems was enforced in all the municipalities of the province.

The municipal ordinances outlined under letters (*a*) to (*k*) were submitted by district health officers or presidents of sanitary divisions in practically all municipalities and health divisions. The reasons why they were not approved in some of them are expressed in the following paragraphs quoted from some of the reports of the district health officers. One said:

> In regard to sanitary ordinances we can but repeat here political influences and some social conditions which most of the time have to be fought against to have one ordinance approved. Cases have been reported of ordinances that after having been submitted a year ago for consideration of municipal council yet no action has been taken up to the present.

Another one said:

> The problem to be solved in connection with sanitary ordinances lies in their enforcement. It is better for a town to have few but well excecuted ordinances than many but completely neglected. Nueva Vizcaya and the Mountain Province are good examples of cleanliness, perhaps the executors of ordinances there are appointed officers of the Constabulary force. So long as the enforcement of sanitary ordinances is in the hands of elected officers or the municipal presidents the execution cannot be expected to be satisfactory owing probably to their good relations with the electors and friendship and relationship with others.

A president of sanitary division stated as follows:

> "Hace ocho meses que estas ordenanzas estan somitadas a la consideración del concejo y no obstante hasta la fecha siguen dormiendo el sueño de los justos sin que hayan terminado su estudio." (Eight months ago these ordinances were submitted to the consideration of the municipal council but up to date they are sleeping the sleep of the just, and the study of such ordinances is not yet finished.)

Nine hundred and thirty-three persons were prosecuted during the year.

The number of persons prosecuted in relation with the number of sanitary orders issued appears quite small. This is due to the fact that prosecutions cannot be instituted without the previous placet or signature of the municipal president. With this requirement it is impossible in the majority of cases to prosecute a person transgressing sanitary ordinances when this person is a politician or has considerable influence among his townsmen. This is set forth so clearly by one of our district health officers that I cannot refrain from quoting his remark:

The lack of coöperation on the part of the municipal police is largely responsible for the small number of prosecutions. If the local police were familiar with their duties every violation of a sanitary ordinance can be prosecuted and the regular complaint filed at the court of the justice of the peace. There would be a large number of prosecutions, resulting in increased efficiency of public health administration. The present state of affairs should in part, be attributed to the indifference of the local health official, and in part also to his desire to retain the popular esteem. The acute observation of the Great Rizal among the people of this day and generation may again be repeated, "La complacencia al vicio se premia mejor que el cumplimiento del deber." (The indulgence of vice is better recompensed than strict compliance with duty.)

Were sanitary officers empowered to sign the charges without the intervention of municipal presidents the enforcement of sanitary ordinances would be more effective.

MEDICAL RELIEF.

There were in the provinces at the end of the year 422 public dispensaries distributed among the towns and barrios of the Islands, not counting the provincial hospitals as noted in the report of "Division of Hospitals." In these dispensaries approximately 114,000 patients were attended. Patients who were not able to go to the dispensaries were attended at their residences by the doctors.

All of these dispensaries are attended exclusively by doctors on the days assigned for dispensary attendance, and all the patients receive free consultation and medicines. Some of these dispensaries are equipped to perform minor surgical operations.

These public dispensaries are maintained by the health fund of the provinces or municipal funds. It is possible that public dispensaries cannot be considered as sanitary improvements in barrios or towns, but they help not only to educate the public but also to change the indifferent attitude of the public toward health measures.

On December 15 the provincial hospital in Albay was opened in the building formerly occupied by the post hospital at Regan Barracks. It can easily accommodate 50 patients, though it has as yet only 10 beds. By the end of the year 31 patients had been admitted to this hospital, 11 minor operations performed, and there have been no deaths.

CLEAN-UP WEEK.

Clean-up week was much more successful last year then heretofore because the schools played the most important part in the work and they deserve the greatest praise for the enthusiasm displayed and for the examples they set by the appearance of the schoolhouses and grounds. It was not so among the people, as in the reports of the district health officers it appears that in some provinces the people had almost forgotten clean-up week.

Clean-up week work was carried out this year under the same plan as last year, namely, the organization of a provincial committee, composed of the provincial board, the division superintendent of schools, the district engineer, the provincial treasurer, the provincial commander of the Constabulary, and the district health officer. The towns of the provinces were divided into groups each of which was assigned to a member of the committee to supervise and direct the work of the municipal officers. The school teachers inspected the houses of their pupils and the sanitary employees the houses, yards, streets, and public buildings in their respective districts.

The time selected for clean-up week, especially in Luzon, coincides with the rice harvest. During this season the majority of the people, not only of the barrios but of the poblacion as well, migrate to the rice fields, leaving most of the houses vacant or occupied by girls or old women, who are not supposed to be able to comply with the orders issued, such as repair of fences and closets, cleansing of yards, filling in of low lands, etc.

Also in the Visayan region the time selected for clean-up week coincides with the rainy season. If the time selected can be changed so that the work can be carried out during the dry season, more satisfactory results can probably be secured.

It is believed that in view of the fact that the dry season and the rainy season come at different times in Luzon than in the Visayan region, in each town or barrio the week before the celebration of the official fiesta should be designated as clean-up week and the authorities should not be allowed to celebrate this fiesta without a certificate issued by the district health officer of the province to the effect that the town or barrio is in a clean condition.

PUBLICITY.

The activities under this head carried on by the officers of the health organizations in the provinces were quite extensive.

Lectures were given by the health officers in the towns, barrios and schools. Exhibitions of a sanitary character were organized in connection with garden-day celebrations and carnivals. On these days, models of sanitary cans for carrying water, pail systems, model sanitary houses, Antipolo systems, water receptacles and containers with the corresponding faucets, pictures of germs, parasites and insects with explanations as to how they produce diseases, wall charts showing the death rate in some provinces by years, cycles of the fly and mosquitoes, rat fleas, etc., were shown.

Besides these, the film entitled "Was it the will of God?" was exhibited in cinematographs in several towns of the provinces in relation with benefits for woman's clubs of puericulture centers, and some exhibitions were without entrance fees.

Exhibitions were also conducted by the domestic-science schools showing the sanitary preparation of meals, and by the district nurses in relation to the proper feeding of infants and the safe and cleanly preparation of their food.

Besides the exhibits shown at public gardens, public lectures on sanitation were also given by the woman's clubs, district nurses, presidents of sanitary divisions and district health officers. These lectures were given not only on garden day but also when attending public dispensaries and in the vaccination and food campaigns. On those days district nurses and doctors go from house to house, and they do not leave without first giving a short lecture regarding sanitation. Afterwards, with the coöperation of the local officials, they call the inhabitants of the barrio to a meeting and explain to them a subject concerning sanitation.

Circulars of information, letters, pamphlets, and other instructions on the subject of health and disease most prevalent were sent out for distribution from time to time.

The publicity work is considered at present an important one not only in regard to the improvement of sanitary conditions of the towns but especially in regard to its tendency toward decreasing the infant mortality, one of the principal causes of which is the ignorance of the parents regarding care and feeding of the infants. To this end the work of this division during the next year will be specially directed.

RESULTS OF SANITARY COMMISSIONS.

The following tables show a few of the more striking statistical results obtained from the work of the sanitary commissions when resurveys were made of some of the localities previously inspected.

These results, though somewhat limited as compared with the scope of the work as originally conceived, sharply accentuate the necessity of such work as is planned for the coming year in regard to the establishment of a thoroughly systematized plan of provincial sanitation. This plan is embodied in the automatic health control system which it is hoped will be organized in at least two nonadjacent provinces during the coming year.

Population and percentage of total population of Philippine cities surveyed by sanitary commissions using different types of water supplies.

Municipality.	Population.	Safe supplies.				Questionable supplies.		Unsafe supplies.			
		Artesian water.		Rain water.		Spring water.		Surface well water.		River water.	
		Population.	Per cent of total population.	Population.	Per cent of total population.	Population.	Per cent of total population.	Population.	Per cent of total population.	Population.	Per cent of total population.
Hagonoy	22,321	22,321	100								
Navotas	13,226	13,226	100								
Malabon	20,468	20,000	97.5					468	2.5		
Obando	7,722	7,336	95.0					386	5.0		
Parañaque	8,541	7,384	86.5					1,157	13.5		
Las Piñas	2,855	2,116	74.5					739	25.5		
Antipolo	5,391	2,139	39.6			2,251	41.7	904	16.8	97	1.9
Boac	14,736	4,739	32.2			36	.2	4,756	32.2	5,205	35.4
Pasig	14,763	3,323	22.7	230	1.4	379	2.6	8,056	54.6	2,774	18.7
Majayjay	6,465					5,990	92.6			475	7.3
Lubao	21,662	19,016	87.8	773	5.6			1,873	8.6		
San Pablo	32,503	5,129	15.7	10	.1	23,082	71.0	4,282	13.2		
Candaba	13,192	4,099	31.1	9	.1			4,431	33.5	4,653	35.3

Population and percentage of total population of Philippine cities surveyed by sanitary commissions using sanitary and insanitary methods of sewage disposal.

Municipality.	Using sanitary methods.		Using insanitary methods.		Having no method of disposal.	
	Population.	Percentage of total population.	Population.	Percentage of total population.	Population.	Percentage of total population.
Hagonoy	9	.10	2,104	9.40	20,208	90.50
Navotas	939	7.10	385	2.91	11,902	89.99
Malabon	282	1.70	4,749	23.20	15,437	75.10
Obando	69	.90	143	1.86	7,510	95.24
Parañaque	28	.10	866	10.40	7,647	89.50
Las Piñas	20	.50			2,835	99.50
Antipolo	3,135	58.00	497	9.20	1,759	32.80
Boac	50	.34	59	.40	14,627	99.26
Pasig	827	5.60	10,830	73.30	3,105	21.10
Majayjay			5,701	88.30	764	11.70
Lubao			311	1.50	21,351	98.50
San Pablo	1,747	5.40	3,665	11.30	27,091	83.30
Candaba			4,485	33.90	8,707	66.10

Comparative mortality rate, resurveyed towns.

Town.	Years.	Death rate per 1,000 population.			Total death rate per 1,000.
		Under 1 year.	Under 5 years.	Over 5 years.	
Parañaque, Rizal	1910-1914	19.36	23.09	12.79	35.62
	1915	15.22	20.37	11.59	31.97
	1916	11.49	21.27	16.21	37.48
Las Piñas, Rizal	1910-1914	15.90	22.69	12.72	35.27
	1915	21.41	26.4	14.38	43.15
	1916	14.70	25.2	12.94	38.15
Navotas, Rizal	1911-1915	20.30	26.77	14.21	40.99
	1916	16.09	29.48	21.13	50.62
	1917	12.67	19.01	14.31	33.33
Malabon, Rizal	1911-1915	15.32	20.60	14.67	35.27
	1916	21.78	32.29	14.50	42.45
	1917	10.88	16.10	14.30	30.34
Antipolo, Rizal	1910-1915	9.19	15.07	14.07	29.15
	1916	9.24	17.37	11.28	28.67
	1917	9.74	19.30	17.47	36.77
Hagonoy, Rizal	1911-1915	11.76	18.35	12.66	30.98
	1916	14.02	27.86	22.40	50.26
	1917	17.05	22.72	13.84	36.56
Obando, Bulacan	1912-1916	15.46	21.06	16.46	37.52
	1917	12.05	14.77	15.16	29.93
Boac, Marinduque	1911-1915	6.68	11.14	11.82	22.96
	1916	5.49	10.99	14.12	25,11
	1917	7 98	11.94	14.26	26.28
Pasig, Rizal	1910-1914	14.9	22.3	14.7	37.0
	1916	12.8	20.8	12.6	33.4
	1917	10.7	13.8	12.3	26.1

CLOSING REMARKS.

The responsibilities, the work, and the duties to be performed have been increasing with the passage of the years for the officers of the Service. At present, these officials are occupied not only in attending to the general sanitation of a province or sanitary division but they are also chiefs of laboratories and hospitals. They attend the public dispensaries, they are the counsellors and directors of the women's clubs and puericulture centers. They are the initiators of permanent sanitary improvements, the inspectors of schools, the directors of campaigns for household gardens and increase of food production. Finally, each one of them should be a publicity agent devoting himself to inculcating in the people sound sanitary doctrines.

Before the reorganization of the Islands into health districts the sanitary officials perhaps have been simple fighters of epidemics, but at the present time they not only must fight epidemics but they must prevent them. So it is that although heretofore the sanitary official was able to find time for private practice of his profession as a doctor, at present not only is it impossible for him to do so but furthermore private practice is a direct contradiction to the new sanitary canons which imperatively require that the sanitary official shall dedicate all of his time to the most ready solution of sanitary problems and more especially those tending to prevent and not to combat dangerous communicable diseases, to diminish the mortality and morbidity figures, particularly infant mortality which is so high in the Philippines.

However, in spite of the fact that the responsibilities and duties of the sanitary officials have been increasing with the lapse of time their salary has been diminishing in like proportion. On the establishment of the Bureau of Health in the Islands the sanitary officials who were then presidents of provincial boards of health received a salary of not less than ₱1,800 a year, this amount has been diminished from year to year by the Appropriation Act until it has been reduced to no more than ₱1,600, wherefore only public-spirited and enthusiastic men who are willing to devote themselves to the welfare of their country can remain in the service which, although in truth it should be considered as the most beneficial to the country, is the most poorly remunerated. A revision of the salaries assigned to the officers and employees of this Service is necessary.

Another of the causes which impedes the progress of the provincial sanitary service in some localities is the appropriation of funds which is made by the provinces. It is necessary that this Bureau shall not depend in part upon the liberality of the provinces; it is necessary to centralize its funds and to establish a uniform organization of all the provinces of the Archipelago and the medical officials and employees should be required to dedicate all their time to sanitary work and the private practice of their profession should be prohibited, but in order to do this it is necessary that they be better paid. The progress of sanitation in the provinces is greatly retarded by the difficult, if not impossible enforcement of the sanitary laws and regulations upon the violators thereof.

The laws do not authorize the district health officers nor the presidents of sanitary divisions to present a charge of infraction of municipal ordinances without the placet of the municipal president, and this official usually refuses to place his signature upon the charge for the reasons already stated, as a result of which it is not only humiliating to the district health officer, but the infractors of the ordinance remain unpunished.

In order to correct this grave defect it is necessary that the provisions of sections 1019 to 1025 inclusive of the Revised Administrative Code, which now apply to Manila, be extended to the provinces.

RECOMMENDATIONS.

1. That the entrance salary for the Service be fixed at not less than ₱2,000 per annum.

2. That the privilege of private practice for medical officers whose salary is less than ₱3,000 per annum be discontinued, thus making private practice prohibitory for all commissioned officers of the Philippine Health Service.

3. That the presidents of the sanitary divisions be classified as commissioned officers of the Philippine Health Service.

4. That the sanitary organizations be uniform in all provinces of the Archipelago, making the provisions of section 1002 of the Revised Administrative Code compulsory.

5. That the provisions of sections 1019 to 1025 of the Revised Administrative Code be extended to all regular provinces of the Islands.

REPORT OF THE DIVISION OF MINDANAO AND SULU.

[Dr. JACOBO FAJARDO, *Chief of Division.*]

GENERAL STATEMENT.

This division has under its supervision two regularly organized provinces inhabited by Christian population, namely, Misamis and Surigao, and seven special provinces inhabited by Mohammedan and pagan populations, Agusan, Bukidnon, Cotabato, Davao, Lanao, Sulu, and Zamboanga. These provinces comprise the territory now known as the Department of Mindanao and Sulu. With the exception of Bukidnon and Davao each non-Christian province has a well-equipped Government hospital and several dispensaries. Besides the Government hospitals, there is a missionary hospital in Davao and one in Zamboanga. In the Christian provinces sanitary divisions in charge of physicians have been organized as far as possible with the needs and amount of funds available.

Owing to outbreaks of cholera and smallpox in this division the greater part of the work has been directed toward the eradication of these diseases. The cholera epidemic, as will be shown under the heading "Preventable communicable diseases," was introduced into northen provinces of this division from Bohol and Oriental Negros. The smallpox in Davao appears to have been introduced from Cebu and the smallpox in Zamboanga from Sulu. These two epidemics have consumed most of the time of the health personnel and constructive works have been relegated to secondary importance. In spite of the severity of those two epidemics and the difficulties encountered in the execution of the sanitary measures, the epidemics have been promptly controlled.

Typhoid fever and dysentery have also continued to be registered in Sulu, Lanao, Zamboanga, and Cotabato. These two diseases fortunately have not assumed epidemic forms but their perennial outbreaks have required the services of the sanitary personnel second only in importance to cholera and smallpox.

In the northern provinces of this division the organization into sanitary divisions is being pushed forward while in the non-Christian provinces this organization is being adopted as far as circumstances permit. In the division a total of 15 sanitary divisions and 108 dispensaries are in operation.

A total of 2,285 hospital patients were treated during the year, with a total of 25,353 [1] hospital days. In the dispensaries 82,063 cases with 182,610 treatments were recorded. Taking

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[1] Data for Butuan Hospital not included.

₱0.80 as the cost for each hospital day and ₱0.25 for each treatment, a total of ₱65,853.90 has been thus accounted for out of the total health fund spent during the year.

Unfortunately the provinces of this division are still frequently visited by epidemics, there having been a total of 4,604 cases of cholera, smallpox, and typhoid combined, with 2,373 deaths, during the year. This statement is not strange since the sanitation of the greater part of the territories incorporated in this division has only been begun since January, 1914. The sanitary problems which have to be faced in the division are the same problems which the pioneer health authorities had to contend with 15 years ago in the northern provinces. Due to liberal consideration given by the Philippine Legislature and executive officials, rapid strides are being made to bring the standard of sanitation and thus the public health of the Mohammedan and pagan inhabitants to the same level now enjoyed by their Christian fellow citizens. Hospitals and dispensaries have been planted in the communities and sanitary personnel have been multiplied in constant vigilance to protect the public health.

The work begun in the northern provinces to reduce the infant mortality has been extended to this division. Women's clubs have been organized in Jolo and Zamboanga initiated by the medical officers. District nurses and graduate midwives have given public conferences on the care of infants and mothers. They have attended deliveries at homes in Zamboanga and their services have been sought by the people. Pamphlets written in local dialects on the care of infants and parturient mothers have been distributed. Baby contests have been held in Zamboanga and Jolo in which the Mohammedan population eagerly participated.

In the food campaign the health and sanitary personnel have coöperated in the distribution of seeds, establishment of vegetable home gardens, and in the propaganda to bring to the public the seriousness of impending food crisis which can only be averted by increased food production of important crops.

The time will no doubt come in the near future when these Mohammedans and pagans, who a few years ago identified themselves with those who opposed the union of this Department, will be brought to a realization of the sincere efforts that the Government has been and is making for their advancement and welfare.

PREVENTABLE COMMUNICABLE DISEASES.

CHOLERA.

The first case of cholera was reported in Aloran, Misamis, January 2. In this town, a total of 40 cases and 28 deaths were registered from January 2 to February 22. These sporadic cases were soon placed under control.

On July 7, cholera cases broke out in the barrios of Balinguan and Talisayan. About the same time, cases of cholera were also discovered in the municipalities of Cagayan, Gingoog, Sagay, Catarman, Mambajao, Initao, and Oroquieta, all in the Province of Misamis. It appears that the reappearance of the disease in Misamis was due to passengers from Bohol, arriving in sail boats in the barrio of Balinguan. Bohol was infected with cholera previous to reappearance of the disease in Balinguan.

On January 1, the first case of cholera was discovered in the barrio of Maraiñgan, municipality of Dapitan. On the same day, cases of cholera were reported in Dipolog. While there is no exact record by which to trace the origin of the cholera, observations tend to show that the disease was brought from Misamis. Cholera reappeared after an absence during the months of May and June in Dapitan. The first cases were found among passengers coming from Cebu and Dumaguete, which were then infected with cholera.

The first case of cholera in the province of Agusan was registered July 7. The disease developed among the four passengers of a sail boat coming from Loay, Bohol, and arriving in Lumbacan, barrio of Masao, July 6. The sail boat left Loay, Bohol, July 2, stopped at Alubihid, Misamis, for drinking water supply. On July 7, one passenger was attacked with cholera followed by death. The cadaver was brought to Masao for burial. The case was reported as fever. Subsequent investigation proved it to be cholera. From this case, the disease was propagated in the various municipalities of the province.

The first case of cholera in Napaliran, Bukidnon, was found on July 27. Owing to easy means of communication between this place and the infected municipality of Balingasag, Misamis, it is very likely that the disease was brought by people traveling from Balingasag in sail boats to Napaliran, whence it spread to Blanco, Agong-oñgang, Manaum, Quitambis, Talaoag, Daoñgon, Maluco, and Catariñgan.

On July 29, the first case of cholera was registered in Buenavista, a barrio of the municipality of Surigao. From this place, the infection was spread to the municipalities of Placer, Gigaquit, Cantilan, Lianga, and Tandag. The first cases of cholera were probably infected in the provinces of Leyte, Bohol, Misamis, and Agusan, all of which were at the time infected with cholera. The frequent means of transportation between this province and those mentioned above explain the rapidity of travel of the disease in the various municipalities of Surigao.

The cases in the beginning of the epidemic were severe, the mortality rate for the division being 81.55 per cent during the first four months, gradually falling toward the end of the epidemic.

The measures used to eradicate the epidemic consisted of isolation of cases, quarantine of contacts, disinfection of quarters, clothing and utensils, disinfection, and safe disposal of human excreta. A provisional hospital, with a capacity for 12 patients, has been established during the epidemic in Cagayan, Misamis. This measure aided in effectively controlling the disease. Medical assistance was offered in the treatment of cholera patients, with several recoveries.

Among the preventive measures taken may be mentioned bacteriological axamination of stools of contacts and people arriving from infected provinces, quarantine for one week of passengers on sail boats coming from provinces infected with cholera, administration of aromatic sulphuric acid to contacts and general cleanliness of houses and premises. Pamphlets in native dialects containing instructions how to avoid cholera were freely distributed. Meetings were held in various infected places, explaining to the people how to avoid cholera and what to do when cholera breaks out. Frequent inspections were made of the infected districts and local officials requested to send immediately report of suspicious cases. Special attention has been paid to the safe disposal of human excreta and the prevention of contamination of water supplies. These last two measures could not be carried out as efficiently as desired on account of lack of funds.

That the disease spread and claimed a number of victims in spite of the rigorous steps taken is not strange in view of the easy means of communication, the wide extent of territory infected, the efforts, either by intention or through ignorance, of the people to hide the cases, and not the least the lact of personnel to make an effective inspection of the infected districts.

SMALLPOX.

The first case of smallpox in Davao was registered in a girl from Cebu. Two days after arrival on November 3 in Davao she developed eruptions of smallpox. On December 24, a Maranao of the name of Amai Manabilang developed smallpox in Marinaop, Dansalan. Manabilang, with three companions, arrived in Marinaop December 23 from Davao. Two of his companions also developed smallpox on December 25. These men contracted the disease in Davao. Of the 3 cases, 2 terminated fatally. Prompt steps were taken to prevent the propagation of the disease. The smallpox in Sulu is a continuation of the epidemic of 1916.

The first cases of smallpox in the city of Zamboanga were registered in the Mohammedan settlement in the barrio of Cawa-Cawa. The cases were probably infected in Sulu.

Below is a summary of smallpox from January to December:

	Cases.	Deaths.
Davao	133	44
Lanao	3	2
Sulu	251	36
Samboanga	663	66
Total	1,050	148

Smallpox in Sulu is confined to the remote districts. The districts of Siasi and Bongao are now free while in Cagayan there remain a few cases. Lack of transportation facilities and of adequate provisions for keeping vaccine virus has been responsible for the prolongation of the disease in the remote places. Smallpox is disappearing in Sulu. In Zamboanga smallpox has apparently been placed under control, while in Davao and Lanao, owing to the distance, the epidemic is on the increase. Smallpox has extended to several municipal districts.

Special attention is being given to pushing regorously sanitary measures to combat the incidence of smallpox. Isolation and quarantine of the contacts and infected districts are being utilized as accessory steps to vaccination. Unfortunately vaccination has not been successful, especially in Davao. The percentage of takes is sometimes as low as 5 per cent. This low percentage certainly justifies investigation. Either the quality of the vaccine or the technic of vaccination or both may be found responsible for such a low percentage of takes. The question has not only an important sanitary aspect, but also an economic one. To preach among a prejudiced Mohammedan population that vaccination is the only means of prevention from smallpox, when subsequently the vaccinated develop the disease, not only retards progress in securing the confidence of these people but actually sets back the work of the Health Service. Some have even claimed through ignorance that vaccination was responsible for the development of smallpox in the Mohammedan communities, which belief has led the ignorant class to flatly refuse further vaccination. An investigation is being carried out in the Department to determine the value of vaccination by injection of the vaccine virus intradermically. It is yet too early to make further comment than that the procedure appears to be of value.

TYPHOID FEVER.

Typhoid fever is endemic in various parts of Mindanao and Sulu. The importance of this disease has only recently been appreciated. Careful observations show that typhoid fever existed before the American occupation, a view contrary to that held by some that the disease was introduced into the Philippines by soldiers of the United States Army. In provinces where a reliable record of the disease has been made, typhoid fever cases are registered practically throughout the year, increasing during the months of April, May, and June, and abating in the months of October, November, and December. In the province of Sulu an attempt has been made to study the epidemiology of typhoid fever. Owing to limited laboratory facilities the data have necessarily been confined to clinical and field observations.

One of the most vital sanitary problems which this division has to face in the years to come is the eradication or at least the reduction of the mortality and morbidity from typhoid fever in the provinces.

The record of the division as to typhoid fever is necessarily limited to the cases reported from districts where the necessary facilities for clinical and bacteriological diagnosis of tyhoid fever are at hand. Below is shown a tabulation of cases and deaths of typhoid fever reported during the year:

	Cases.	Deaths.
Agusan	[a] 20	[a] 20
Cotabato	7	1
Davao	55	41
Lanao	15	-------
Misamis	[a] 173	[a] 173
Sulu	39	7
Zamboanga	33	18
Total	342	260

[a] Doubtful.

EPIDEMIOLOGY OF TYPHOID FEVER IN JOLO.

The first authenticated case of typhoid fever in Jolo was diagnosed in the person of Mr. Gabriel Barliz, formerly a clerk of the auditor residing in Walled City. Mr. Barliz became ill April 12, 1916. Since then sporadic cases of typhoid fever have been registered up to the present time. A study of the cases was undertaken with the view of finding the mode of transmission.

This report is based on the analysis of 28 cases of typhoid fever occurring from April 12, 1916, to June 11, 1917, a period of 14 months. The clinical diagnosis in every instance has been confirmed bacteriologically by the department bacteriologist at Zamboanga.

All the cases were treated in the Sulu Public Hospital. The data in the first table were obtained mostly from the history records written by the resident physicians, Dr. S. Y. Orosa and Dr. S. Luna-Orosa.

The study of the epidemiology of the disease presented many difficulties. The cases, as will be seen, came from different sections of the municipality of Jolo and the province. During the 14 months only 28 cases were noted, giving an average of 2 cases a month. Attempts to determine the origin of the disease from the data available in the beginning of the epidemic were not satisfactory.

The procedure adopted in approaching the problem is perhaps open to criticism. It appears, however, to be the most feasible method at present. The conclusions have been drawn not from preconceived ideas but from facts obtained from the data of observations and familiarity with local sanitary conditions.

The report is divided into the following parts: Epidemiological data; classification as to modes of infection; classification into known means of infection; analysis of the local means of transmission applied; and conclusions.

Data on epidemiology of typhoid.

No.	Name.	Age.	Occupation.	Residence.	Date of illness.	Date of admission.	Date of discharge.	Result.
1	G. Barliz	30	Auditor's clerk	Garcia St., W. C.	4-12-16	4-16-16	5- 8-16	R
2	G. Astete	32	Prisoner	Provincial jail	5- 5-16	5-11-16	6-21-16	D
3	S. Castañeda	20	Wireless operator.	Buyon St., S. R.	5- 6-16	5-12-16	6- 5-16	R
4	A. Bautista	13	Schoolboy	San Raymundo	6-20-16	7- 2-16	7-16-16	R
5	C. Marcaida	30	Municipal police	do	7- 1-16	7- 3-16	7-15-16	R
6	G. Balcon	38	Housewife	do	7- 5-16	7-12-16	7-23-16	R
7	Sakai	18	Sailor	Sanchez St., W. C.	9-17-16	9-22-16	10- 5-16	D
8	F. Alagar	22	Engineer, road roller.	Timbañgan & Chinese pier.	12-22-16	12-25-16	2- 6-17 12- 5-16	R D
9	A. Gonuchi	23	Carpenter	Moro St., Tulay	11- 5-16	Outpatient		
10	Y. Shoguchi	27	Diver	Buyon St., S. R.	1- 1-17	1- 5-17	2-10-17	R
11	D. Bucoy	12	Schoolboy	Arolas St., Astur.	1- 7-17	1-11-17	2- 6-17	R
12	Tiraji	28	Carpenter	Chinese pier	1- 1-17	1-16-17	2- 1-17	D
13	P. de la Cruz	52	Laborer	"Gilbert"	1-21-17	1-29-17	2-24-17	R
14	F. de los Reyes	24	do	do	1-22-17	1-29-17	2-24-17	R
15	M. Lazaga	4	Girl	San Raymundo	2- 2-17	2- 3-17 5-31-17	2-15-17 7- 4-17	R D
16	K. Yasui	30	Storekeeper	Moro St., Tulay	2- 3-17	2- 6-17	2-22-17	R
17	C. Cerebello	24	Chauffeur	Serrantes St., W. C.	2-11-17	2-12-17	2-28-17	R
18	C. Ignacio	22	Constabulary	Taglibi	1- 2-17	2-12-17	3-30-17	R
19	K. Matsumoto	32	Sailor	"Mindanao"	3- 7-17	3-10-17	3-21-17	R
20	J. de los Reyes	24	Cattle brander	Arolas St., Astur.	3- 7-17	3-11-17	3-19-17	R
21	E. Ortez	25	Messboy	Garcia & Sanchez, W. C.	3-15-17	3-19-17	6-14-17	R
22	I. Saavedra	38	Carpenter	Chinese pier	3-20-17	3-26-17	5- 7-17	D
23	Aisa	19	Seamstress	Moro settlement	4- 2-17	4- 9-17	5- 2-17	R
24	W. Manion	33	Supervising teacher.	Bongao	4-18-17	5- 9-17	5-23-17	R
25	J. Mamanglu	20	Housewife	do	5-22-17	5-29-17	5-30-17	D
26	A. Ignacio	22	Draftsman	Marina St., W. C.	5-31-17	6- 4-17	7-14-17	R
27	H. Oki	23	Barber	Parian "Tulay"	6-11-17	6-18-17	7-17-17	R
28	J. Inegida	25	Merchant	do	6- 8-17	6-11-17	7-29-17	R

R, recovered; D, died.

CLASSIFICATION AS TO MODE OF INFECTION.

Taking as bases of classification the coincidence of the date of illness, the proximity of the quarters and the intimacy of living, the cases form the following groups:

Group.	Case No.	Probable mode of transmission.
(*a*)	1	Undetermined.
(*b*)	2 and 3	Neighbors (simultaneous date of illness).
(*c*)	4	Undetermined.
(*d*)	5 and 6	Neighbors (practically simultaneous dates of illness).
(*e*)	7	Undetermined; first Japanese case. Cadaver taken home October 5 and buried October 6. Religious ceremonies held in house of deceased attended by several Japanese.
	9	Taken ill about a month later; likely infected from case No. 7.
	10 and 12	Both cases taken ill at the same time, 26 days from the date of burial of case No. 9.
	16	Taken ill two days after the funeral of case No. 12.
	19	Taken ill 13 days after the discharge from the hospital of No. 16.
	27 and 28	Taken ill practically simultaneously at same house. (Note.—Cases Nos. 9, 10, 12, 16, and 19 contracted illness likely through typhoid carriers. The period of liability to infection, from date of illness to three weeks after date of discharge. Period of transmission by typhoid carrier is variable.)
(*f*)	8	Undetermined; returned to Jolo on Sunday.
(*g*)	11	Undetermined.
(*h*)	13 and 14	Both laborers on Pearl Bank Islands, living on board C. G. *Gilbert*.
(*i*)	15	Daughter of ward attendant of hospital; mode of infection either undetermined or finger transmission. Father took care of typhoid patients.
(*j*)	17	Undetermined.
(*k*)	18	Do.
(*l*)	20	Do.
(*m*)	21	Do.
(*n*)	22	Do.
(*o*)	23	Do.

So far no relation has been found between the fifteen groups shown in the foregoing classification.

Classification into known means of infection.

Means of infection.	Case Nos.	Total.
Drinking water (city supply)	5, 8, 20, 23, 25	5
Typhoid (carrier and finger)	9, 10, 12, 15, 16, 19, 25, 27, 28	9
Flies (pail toilet)	1, 2, 3, 4, 5, 6, 7, 8, 11, 15, 21, 24, 26, 27, 28	16
Vegetables (salad consumption)	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 26, 27, 28.	25
Fish (shellfish)	9, 10, 12, 16, 27, 28	6

Under drinking water are classified the cases using water from dug wells and the city water supply for drinking purposes; under typhoid are included cases which have been exposed to typhoid cases and contacts including finger transmission; under flies are the cases which use pail system for toilets; under vegetables are included cases which indulge in uncooked vegetables in the form of salad; and under fish are included cases which eat uncooked fish (limited to Japanese). Cases living in houses situated over water are fairly free from contamination with flies, hence excluded from the classification.

ANALYSIS OF THE LOCAL MEANS OF TRANSMISSION.

The municipality of Jolo has about 8,000 people, of whom 50 per cent use the old city water supply; 20 per cent use spring water; and 30 per cent use distilled water. If the cause of the typhoid epidemic were infection of the city water supply, the only drinking water supply exposed to contamination, the Mohammedan population in Tulay would be expected to suffer most from the disease as in usual in epidemics of dysentery. One prominent feature of the typhoid epidemic which has been going on for over a year is the apparent freedom of the Mohammedan population from the disease, but one case (No. 23) having been recorded among them. Case No. 25 was a Catholic convert from Mohammedanism and brought to the hospital from Bongao already in a serious condition. This distinguishing feature of the typhoid epidemic is significant, since in every epidemic of water-borne diseases the poor Mohammedan population was the class most severely affected. The evidence, therefore, conclusively absolves the city water supply from any relation with the present typhoid cases. Further, if the source of infection were drinking water, there would undoubtedly be more cases recorded during the length of time covered in this report.

It is also noteworthy that the cases have come mostly from the districts where the sanitary condition of the premises and homes is comparatively good.

The Japanese are the only class of population known to indulge in uncooked raw fish, including shellfish, in the form of salad. This custom is prevalent among these people. They believe raw meat more digestible and nutritious than cooked meat. If fish were the single cause of the present typhoid epidemic, the disease would be limited to this portion of the population.

The number of possible cases transmitted through the agency of flies is 16. It is not improbable that a few of the cases were infected through flies. But flies do not by any means represent the only agents, since the poor class of citizens have not suffered more than the well-to-do class.

There now remains the possibility of transmission of the disease by vegetables. The Mohammedan people do not eat uncooked vegetables in any form. In the provincial jail no uncooked vegetables are served. These cases, therefore, have been excluded from the possibility of infection by contaminated vegetables, and represent 3 of the 28 cases. The other 25 cases are known to eat vegetables uncooked and as salads.

On examining the evidence in favor of vegetable transmission of the disease the following facts are noted:

(1) The classes of population that indulge in the consumption of uncooked vegetables have suffered the heaviest incidence of the disease.

(2) Cases Nos. 13 and 14 are Bureau of Public Works laborers living on board the coast guard *Gilbert.* These laborers have their foods prepared on board the *Gilbert.* They are provided with distilled water for drinking. When these cases became ill simultaneously they were engaged in the construction of a lighthouse on Pearl Bank Island. No subsequent cases of the disease have been noted among laborers and members of the crew.

The only relation these cases bear to the other typhoid cases is the fact that the *Gilbert* used to make calls at Jolo to buy food articles from the market. Vegetables are served to the laborers. It is not unreasonable to suspect that these two cases were infected by the vegetables purchased at the Jolo market, taking into consideration the simultaneous date of illness.

(3) The consumption of uncooked vegetables furnished the only means in common with the greatest number of cases studied.

(4) Investigation of three gardens where the vegetable supplies of the market come from gave the following findings:

(*a*) A pit was found in one of the gardens 1 meter deep and two-thirds of a meter in diameter. The pit was lined with concrete. A can dipper was found in the toilet. Fecal matter was found in the pit. The findings point to the conclusion that human fecal matter and urine are mixed in the pit and used as fertilizer. This suspicion becomes stronger when the fact that the owners and laborers are Chinese is taken into consideration, as it is known that this practice is common in China.

(*b*) Blood specimens of the laborers in the three gardens were submitted to the department bacteriologist at Zamboanga for Widal reaction, the findings being: Leesi, Leetig, Limtan, negative; Hauppaun, Duencong, Uyak, Chuauy, positive; Lansing, doubtful; Tan Chua, weakly positive.

Of the four laborers who gave positive Widal test, Haup-puan and Uyak work in the first garden, where the above-mentioned pit was found. Duencong and Chuauy are laborers from the second garden. Tan Chua is a laborer from the third garden, and Lansing from the first garden.

CONCLUSIONS.

From the results of the preceding classifications of the cases the following conclusions are drawn:

First. The origin of the typhoid epidemic in Jolo was due to consumption of raw infected vegetables.

Second. Infection of the vegetables came from the use of excrement of typhoid carriers as fertilizer.

Third. Seven cases of typhoid fever contracted the disease from food contamination or finger transmission (Cases 9, 10, 12, 16, 19, 27, and 28).

Fourth. Cases 2 and 3 probably contracted the disease through contamination by flies.

Fifth. Cases 15 and 25 became infected through finger contamination by attendants taking care of typhoid cases.

Sixth. The cause of infection of case No. 23 is undetermined.

Seventh. Fifteen cases of the disease or 54 per cent of the total contracted it through eating uncooked vegetables in the form of salad.

DYSENTERY.

The following table gives the number of cases of dysentery recorded in the provinces during the year:

Province.	Cases.	Province.	Cases.
Agusan	129	Misamis	17
Bukidnon	36	Sulu	150
Cotabato	155	Zamboanga	76
Davao	178		
Lanao	376	Total	1,117

Dysentery was present throughout the year. Most of the cases reported came from districts with no adequate provision for safe drinking water supplies. Efforts are being made to provide important communities with provisional drinking water supplies and the large cities with permanent water supplies. The following municipalities have permanent public water supplies: Zamboanga, Zamboanga; Jolo, Sulu; Parang, Cotabato; Lumbatan, Lanao; and Malaybalay, Baluco and Dalirig, Bukidnon. There is one artesian well in Cagayan.

Permanent water supplies will soon be under construction in the following municipalities: Siasi, Sulu; Placer, Cacuag and Lianga, Surigao.

In districts remote from municipalities with permanent water systems provisional drinking water supplies have been constructed, utilizing mostly springs.

The mortality from dysentery in the provincial hospitals is about 13 per cent. The mortality rate in the outstation is without doubt much higher owing to the difficulties in giving the proper care, diet, and treatment. Dysentery plays a very important role in the high mortality and morbidity rates in Mindanao and Sulu. The economic loss occasioned by this disease alone justifies the expenses incurred in the establishment of adequate water supplies.

LEPROSY.

The collection of lepers in provinces inhabited by Mohammedan population is a radical sanitary measure. Violent opposition on the part of these people has been raised, especially in Lanao and Sulu. Efforts have been made to secure the aid of local prominent headmen in the apprehension of lepers. These influential man have responded creditably and it is due to their tact and sagacity that happily no unfortunate incident has occurred. The following table shows the number of lepers collected during the year:

Province.	Number.	Province.	Number.
Agusan	34	Sulu	22
Davao	3	Zamboanga	19
Lanao	27		
		Total	105

MALARIA.

Malaria is the most prevalent disease in the division, especially in provinces inhabited by the Mohammedan and pagan population. Owing to the vast territory and lack of funds no radical steps for the eradication of the disease have been taken. Quinine has been distributed as freely as possible in the dispensaries. By this measure alone the prevalence of the disease has been reduced 75 per cent in places like Lanao, Cotabato and Agusan, as shown by the records for the last three years.

The following data are taken from the reports of the different dispensaries:

Province.	Cases.	Province.	Cases.
Agusan	898	Misamis	471
Bukidnon	43	Sulu	6,033
Cotabato	3,023	Zamboanga	1,248
Davao	2,093		
Lanao	3,276	Total	17,085

VENEREAL DISEASES.

The problem of venereal diseases is a difficult one. The registered prostitutes are satisfactorily handled. Regular examination is made and isolation and treatment of the infected cases carried out. The clandestine prostitutes are responsible for the propagation of venereal diseases. To place this class of women in a minimum anger of propagating venereal diseases requires expenses for their maintenance and quarters, and additional work and an increase of personnel. In Cotabato, Jolo, and Zamboanga these measures have been taken while in other places it has been impossible to carry out similar measures for lack of funds.

As shown is the following table, venereal diseases have not assumed such proportions as to require such urgent consideration as the communicable diseases already discussed. However, it is highly essential in the provincial capitals to provide the necessary facilities to examine and treat the clandestine prostitutes.

Province.	Nunber of cases.	
	Syphilis.	Gonococcus infection.
Agusan	10	22
Cotabato	18	86
Davao		34
Lanao	12	75
Misamis		4
Sulu	7	66
Zamboanga	10	18
Total	57	305

INTESTINAL PARASITES.

The records of the division show that intestinal parasites are as prevalent in the division as in the northern provinces. Very few organized municipalities have satisfactory sewage systems for the disposal of human wastes. In the barrios adjoining provincial capitals, the pit system is gradually being introduced. In the communities along the coast the disposal of human excreta does not present so difficult a problem as in the settlements in the interior. Houses that are built over the water are provided with separate apartments for the disposal of human waste directly into the sea. In the capitals of the provinces, public toilet facilities of the type recommended by the Health Service are being installed.

The prevalence of intestinal parasites, taken from the reports of the different dispensaries, is shown in the following table:

Province.	Cases.
Agusan	128
Cotabato	1,939
Davao	282
Lanao	437
Misamis	4
Sulu	3,908
Zamboanga	438
Total	7,136

MISCELLANEOUS DISEASES.

[From report of dispensaries.]

Disease.	Cases.
Other diseases of the skin and annexa	16,861
Chronic bronchitis	3,739
Diseases of the eyes and annexa	2,917
Other diseases of the stomach (cancer excepted)	2,653
Other diseases of the intestines	2,430
Acute abscess	1,555
Diarrhoea and enteritis	1,581
Furuncle	1,430
Diseases of the mouth and annexa	1,539
Neuralgia and neuritis	917
Acute articular rheumatism	784

DISPENSARIES.

The total number of dispensaries in operation during 1917 was 108, classified as follows:

In charge of physicians.

Agusan	1	Misamis	5
Cotabato	2	Sulu	1
Davao	3	Surigao	1
Lanao	2	Zamboanga	3

Incharge of graduate nurses.

Agusan	2	Lanao	1
Cotabato	3	Sulu	3
Davao	5	Surigao	1

Incharge of nongraduates.

Agusan	2	Misamis	10
Bukinon	3	Sulu	11
Cotabato	11	Surigao	7
Davao	7	Zamboanga	8
Lanao	8		

Special.

Davao	5	Zamboanga	3
		Total	108

The separation of the work of dispensaries and schools was effected in April. The results have been beneficial both to the schools and the Health Service. Dispensary attendants have been enabled to extend their services to remote districts. Regular inspection of the municipal districts has been carried out; simple rules of hygiene and sanitation have been enforced more rigidly in native homes; people living far from the dispensaries have received medical aid; and better knowledge of the local sanitary conditions has been obtained.

In the province of Sulu a plan of assigning dispensary attendants to the hospital for two months has been inaugurated. The aim has been to give dispensary attendants an opportunity to acquaint themselves with the most common diseases in the locality and the methods of treament. The work in the dispensaries is not interfered with since dispensary attendants take turns and a sanitary inspector is sent as a substitute to the station to relieve the dispensary sanitary inspector called on for duty. By this arrangement the technical service in the field dispensaries is greatly improved; not only do the dispensary sanitary inspectors perform their work more efficiently but they acquire knowledge in the early identification of communicable diseases.

Summary of dispensary cases treated.

Province.	Cases.	Treatment.
Agusan	6,304	12,132
Bukidnon [a]	177	249
Cotabato	24,014	55,543
Davao	7,885	23,554
Lanao	12,942	32,084
Misamis [b]	1,837	4,916
Sulu	22,893	39,711
Zamboanga	6,011	14,421
Total	82,063	182,610

[a] From July to December only. [b] From August to December only.

HOSPITALS.

A new hospital has been completed in Cotabato of the type of the Lanao and Sulu Public Hospitals. A concrete hospital is under construction and nearing completion in Zamboanga. With the completion of the Zamboanga Public Hospital, there will be in the division the following well-equipped hospitals: Sulu Public Hospital, Lanao Public Hospital, Cotabato Public Hospital, Zamboanga Public Hospital, and Rizal Memorial Hospital. Provisional hospitals are also in operation in Agusan, Misamis, and Mati.

In spite of the increasing high prices of medical and surgical supplies efforts have been made to fully equip with the necessary supplies the three hospitals in Lanao, Sulu, and Cotabato. Special attention has been paid to improving the service in the hospitals. In the hospitals the medical officers have acquired knowledge of the diseases prevalent in the provinces. The facilities for comfort, alleviation, and cure of the sick have been brought to a high standard worthy of comparison with those of other institutions of the same kind. Diseases requiring surgical intervention have been successfully handled. Hospitals have proved the most effective means of gaining the confidence of the people. Old standing diseases requiring surgical treatment have been handled successfully, gaining the admiration especially of the Mohammedan people. A total of 2,285 patients were treated.

AGUSAN.

COMMON DISEASES.

Diseases.	Cases.	Deaths.
Gastroenteritis	108	14
Gastritis	268	0
Dysentery	129	9
Intestinal parasites	128	0
Skin disease	747	0
Malaria	898	94
Influenza	129	13
Varicella	34	0

AGRICULTURAL COLONIES.

There is a movement to establish in the near future two agricultural colonies, Manobo Farm and Taglibo Plantation Company.

MARKETS.

The public markets are provided with toilet facilities. A total of 635 animals, of which 558 were pigs, 26 carabaos, 16 cows, and 5 dogs, were slaughtered. None were found to be harboring disease of any kind.

CEMETERIES.

Two municipal cemeteries established especially for interment of cholera cadavers were established in the barrio of Ambago, municipality of Butuan, and in the barrio of Cumagagascas, municipality of Cabadbaran.

FOOD CAMPAIGN.

The Health Service has coöperated with the other bureaus in the campaign for increased food production; seeds were distributed to the inhabitants of the municipality of Butuan, resulting in increased production of vegetables of various kinds.

BUKIDNON.

COMMON DISEASES.

The most common disease in this province from July to November was malaria. In Malaybalay from July to November there were registered 50 cases with 20 deaths and in Impasugong from October 16 to November 15 there were 40 cases with 25 deaths. The following sanitary measures were carried out: Filling in of the low lands; sprinkling with kerosene stagnant water, and administration of quinine in prophylactic doses.

MUNICIPAL SANITATION.

The pit system for the disposal of human excreta was enforced. The construction of fences around the houses has been made obligatory. Domestic animals have been prohibited to go at large in the streets; canals and ditches have been dug to provide good drainage; the cleaning of houses and premises has been strictly enforced.

CEMETERIES.

Thirteen cemeteries were in actual use in the province, 7 Catholic and 6 municipal. They have been kept in good sanitary condition and are provided with fence and doors.

MARKETS.

New markets were established in Malaybalay, Impasugong, Maluco, Tanculan, and Talacag, all of light materials.

WATER SUPPLIES.

The sources of water supplies are rivers and springs. Public water supplies exist in Malaybalay, Maluco, and Dalirig. Public baths are also in use in Dalirig.

PHYSICAL EXAMINATION OF SCHOOL CHILDREN.

The pupils of Malaybalay, Maluco, Impasugong, and Talacag were inspected, a total of 2,896. Skin diseases and dental caries were the most prevalent defects found.

FOOD CAMPAIGN.

Home vegetable gardens have been established in various municipalities of the province. Seeds were distributed to about 400 people. An agricultural college graduate has already succeeded in establishing 17 school gardens and 3 Government plats planted with vegetables.

COTABATO.

COMMON DISEASES.

The following are the most prevalent diseases in the province:

Disease.	Cases.	Disease.	Cases.
Dhobie itch	4,614	Bronchitis	1,248
Malaria	3,023	Rheumatism	368
Other skin affections	1,690	Conjunctivitis	346
Intestinal worms	1,524	Ulcers (unclassified)	317
Yaws	1,395	Dysentery (unclassified)	128

It is estimated that 80 per cent of the non-Christian population is affected with skin diseases. About 70 per cent of the non-Christians admitted to the hospital gave a history of yaws. Malaria is quite prevalent in the province. A pernicious type of malaria has been noted in Titay and the territory from Cotabato to Fort Lebak. Some of the cases admitted to the hospital from this district resisted intravenous injections of quinine and urea hydrochloride and bichloride of mercury solution.

MUNICIPAL SANITATION.

Cotabato.—The Cotabato sewer system begun in 1916 has been completed and is now in operation, but owing to the low level of the townsite about three-fourths of the town is still floded at high tides and heavy rainfalls. Both the Government and private individuals are gradually filling in the low lands.

The attempt to drill an artesian well in Cotabato failed.

The provisions of the sanitary code, especially the sections dealing with cleanliness of houses and premises, sale of food articles, inspection of public markets and slaughterhouses, and the regulation of prostitutes, have been enforced, and clandestine prostitutes have been treated and isolated when found infected.

Parang.—The municipal health officer and sanitary inspector have enforced the provisions of the sanitary code. The water system completed in 1916 has been in operation.

AGRICULTURAL COLONIES.

The agricultural colonies have the following population:

Silik	2,701
Pikit-Pagaluñgan	2,387
Glan	222
	5,310

Each colony has a dispensary in charge of a trained dispensary attendant. In Pagaluñgan and Glan there are two sick wards each with a capacity for 6 patients, intended for emergency cases awaiting transportation to the Cotabato Public Hospital. In Silik cases of probable amoebic dysentery were recorded, from 3 to 6 cases a month, believed to be due to infected water supply. Cases of malaria in the colonies have notably decreased. The general health of the colonists is good.

JAILS.

The sanitary condition of the provincial jail in Cotabato and the municipal jail in Parang is satisfactory.

CEMETERIES.

The following cemeteries are in operation in the province of Cotabato:

Cotabato Catholic Cemetery.
Tamuntaka Catholic Cemetry.
Pollok Catholic Cemetery.
Cotabato Chinese Cemetery.
Parang Chinese Cemetery.
Cotabato Municipal Cemetery.
Parang Municipal Cemetery.
Peidu Pulañgi Municipal Cemetery.
Pagaluñgan Municipal Cemetery.
Ladtiñgan Municipal Cemetery.
Glan Municipal Cemetery.
Talitay Municipal Cemetery.

There are at present no cemeteries for the Mohammedans and pagans established in accordance with sections 1072–1107 of the Revised Administrative Code of 1917. In Silik and Dulaan efforts are being made to establish Mohammedan and pagan cemeteries.

MARKETS.

The construction of a modern market in Cotabato to replace the present old building is contemplated. No improvement was made in Parang market. Steps are being taken to regulate the sanitary condition of the native markets owned by the datus. In Salimbao district the provincial government already controls the market.

WATER SUPPLIES.

Parang is the only municipality in the province with a public water supply, the source being a spring. In Cotabato distilled water from the ice plant and rainwater are used for drinking. Unfortunately the attempt to drill an artesian well in Cotabato was unsuccessful. There are mineral springs at the foot of the Constabulary hill containing sulphur.

In Kidapawan and Buldung rivers and springs are available for drinking water supplies, but in the lower part of the Cotabato valley the only source is the Maguindanao River. This river is polluted by the sewage of the inhabitants living on both sides. In many parts of the province streams and wells are used as sources of drinking water supplies.

PHYSICAL EXAMINATION OF SCHOOL CHILDREN.

A total of 564 school children were examined in the following schools:

Piang's Agricultural School, Kudarañgan.
Silik Agricultural School, Silik.
Ginatilan Public School, Colony No. 1.
Peidu Pualñgi Public School, Peidu Pulañgi.
Glan Masla Public School, Glan.
Glan Padidu Public School, Glan.
Pañgian Primary School, Pañgian, Glan.
Lebak Public School, Lebak.
Buldung Agricultural School, Buldung.
Kidapawan Farm School, Kidapawan.
Ladtiñgan Public School, Ladtiñgan.
Cabacan Farm School, Cabacan.
Salimbao Public School, Nuling.
Kalañganan Public School, Kalañganan.
Dinaig Public School, Dinaig.
Tamuntaka Public School, Tamuntaka.
Cotabato Public School, Cotabato.
Moro Girls Industrial School, Cotabato.

Of the number of pupils examined, 263 or 46.6 per cent were found affected with one of more diseases. Of these, 50 or 19.01 per cent had dental caries and 45 or 17.09 per cent had hypertrophied tonsils.

FOOD CAMPAIGN.

Since the early part of October the Health Service in the division has taken part in the campaign for the production of more foodstuffs. To this end, all health employees were requested in a circular letter to take part by planting foodstuffs such as corn, camotes, and rice, and to encourage the people to produce more food. As to the practical results of the food campaign, little can be said yet as the people are only preparing their fields for corn; others have already planted and will harvest in three or four months.

The establishment of home vegetable gardens has already started with a shipment of seeds received some weeks ago; the distribution of seeds is being accomplished with regularity and economy. In the municipality of Cotabato few vegetable gardens can be established on account of frequency of floods.

DAVAO.

COMMON DISEASES.

Below are shown the most prevalent diseases:

Disease.	Cases.	Disease.	Cases.
Malaria	2,093	Skin diseases	528
Infected wounds	412	Intestinal parasites	300

The stools of school children were examined for intestinal parasites and the children found infected were given the necessary treatment.

CEMETERIES.

The following cemeteries are in use:

Catholic.—Baganga, Davao, San Victor, San Jose, San Pedro, Manurigao, San Antonio, Palo Alto, Zaragosa, San Fermin, Caraga, Mati, Dapnan, Santiago, Mercedes, Santa Fe, San Roque, San Alfonso, Maureses, Holy Cross, Cateel, Kinablañgan, Baculin, Concepción, San Luis, San Miguel, Boston, Arayon, and San Isidro.

Municipal.—Caraga, Mati, Cateel, Manay, Davao, Santa Cruz, Sirib, Malagos, Tagapatpan, Baguio, Magnaga, Daliao, Sirawan, and Talomo.

Private.—American cemetery of Davao.

New cemeteries were approved during the year as follows: Malagos, Tagatpan and Baguio, in the municipal district of Guianga; Magnaga in the municipal district of Pantukan; and Daliao, Sirawan and Talomo, in the municipality of Davao.

MARKETS.

There is only one market in the province, located in the municipality of Davao.

WATER SUPPLIES.

Mati and Caraga have public water supplies. In the rest of the province the sources of drinking water are springs, wells and rain water.

PHYSICAL EXAMINATION OF SCHOOL CHILDREN.

A total of 902 school children were examined in the following schools:

Baganga.
San Pedro, Caraga.
Kinablañgan, Baganga.
Cateel.
Taguibu, Mati.
Busu, Mati.
Davao Central.
Daliao School, Davao.
Bago School, Davao.
Talomo School, Davao.
Catholic School, Davao.
Sirawan Public School.
Tigato Public School.
Davao Public School.
Talomo Public School.

FOOD CAMPAIGN.

The entire personnel of the Health Service coöperated with the provincial governor in the campaign for increase of food production. Instructions were given as to the best means of increasing crops in the municipal districts of Pantukan, Samal, Sigaboy, Tagum, Guianga, and Saug. The amount of land cultivated was greatly increased and a corresponding increase in the food crops is expected. The deputy governor at large, who is a graduate of the College of Agriculture, with the coöperation of the dispensary attendants, is in charge of the food campaign in the municipalities along the Pacific coast.

LANAO.

COMMON DISEASES.

Of the 14,289 cases treated in the dispensaries, the following were the most common diseases:

Disease.	Cases.
Malaria	3,276
Itch	1,153
Bronchitis	1,071
Wounds, infected, lacerated, punctured, etc.	1,068
Scabies	1,030
Headache	600
Furuncles, carbuncles and boils	589
Intestinal worms, ascariasis, hookworm, etc.	488
Ulcers unclassified	461
Constipation	401
Dysentery	293
Conjuctivitis	345
Diarrhea	292
Ringworm	268
Dengue fever	234
Indigestion	226
Abdominal colic	213
Cold abscess	172
Skin diseases, unclassified	134

AGRICULTURAL COLONIES.

The American colony at Momuñgan is making rapid progress. More than one hundred hectares of corn have already been planted. The production of rice is also on the increase. Rice and corn mills were installed during the year. There is a movement on foot to bring in 30 families of Christian Filipinos from the northern provinces to take the place of the Americans who have left the colony.

CEMETERIES.

At present there are no cemeteries in the province established in accordance with existing laws. The cemeteries in Momuñgan and in Iligan have not been kept in good sanitary condition lately. The Chinese cemetery and the cemeteries in Camp Keithley and Overton are well arranged and kept clean.

MARKETS.

The Malabang market has a concrete floor and is always kept clean. The markets in Iligan, Dansalan, Malabang, Kolambugan, and Ganassi are constructed of light materials and do not have provision for drainage nor water supplies.

WATER SUPPLIES.

Dansalan, Tamparan, and Ganassi depend upon Lake Lanao for water supply which is very unsatisfactory. Lumbatan is using an old water supply constructed by the military in the early days. The source is a spring. Kolambugan gets it water supply from a T-branch pipe of the water system which supplies the lumber mill, which arrangement was made through the kindness of Mr. Benzon, former manager of the Kolambugan Lumber Company. It is believed that Malabang could be easily supplied with potable water by drilling an artesian well.

PHYSICAL EXAMINATION OF SCHOOL CHILDREN.

A total of 756 school children were examined during the year, with the following results:

Disease.	Cases.	Per cent.
Hypertrophied tonsils	353	49.34
Dental caries	192	25.39
Trachoma	124	15.07
Pediculosis (no live pediculi)	75	9.92
Anemia	66	8.75
Taenia	50	6.61
Pediculosis (with live pediculi)	32	4.23
Adenitis tubercular	31	4.10
Scabies	29	3.83
Adenoids	22	2.91
Tuberculosis pulmonary incipient	13	1.71
Ringworm (taenia imbricata)	7	0.92
Conjunctivitis acute	5	0.66
Discharge from one car	5	0.66
Mitral insufficiency	4	0.52
Leucoma	4	0.52
Yaws	2	0.26
Malaria	2	0.26
Mumps	1	0.13
Discharge from both ears	1	0.13
Helminthiasis	1	0.13
Tropical urcer	1	0.13
Deaf	1	0.13
Backward development	1	0.13

FOOD CAMPAIGN.

Through the initiative of the provincial governor, a meeting was held, attended by representatives from every part of the province. People were urged to cultivate more lands and thus increase the food crops. It is calculated that the area of land cultivated during the year was about double that of the previous year, but the havest per acre was much less, due to excessive rainfall. A greater area was planted with rice, but about 50 per cent of the upland and lowland rice was destroyed by unfavorable weather conditions. The same is also true of corn. Sweet potatoes, coffee and sugar cane were also planted. There is also expected an increased production of Irish potatoes in Lumbatan. Greater impulse has also been given during the year to the establishment of home vegetable gardens. There is no better pasture land than Lanao, and it is believed that the raising of livestock will be of great benefit.

MISAMIS.

COMMON DISEASES.

The most common diseases that have been registered in this province are malaria, tuberculosis, and infantile convulsions. The following are occasionally also registered: measles in the municipalities of Mambajao, Oroquieta, and Aloran; and varicella in the municipalities of Cagayan and Plaridel.

MUNICIPAL SANITATION.

The sanitary condition of the municipalities is satisfactory. Beginning with the second semester, the organization of the municipalities of this province into five sanitary divisions in accordance with the Administrative Code was completed, as follows: First division, Mambajao, Catarman and Sagay; second division, Baliñgasag, Talisayan and Gingoog; third division, Tagoloan, Cagayan and Initao; fourth division, Misamis, Jimenez, and Aloran; fifth division, Oroquieta, Plaridel, and Balingao; the residences of the presidents being in Mambajao, Baliñgasag, Cagayan, Misamis, and Oroquieta. The president of the third sanitary division is at the same time the resident physician of the provincial public hospital. The two graduate nurses assigned especially to the reduction of infantile mortality and tuberculosis began their work about the end of the year. It is planned to provide one graduate nurse for each sanitary division, but owing to lack of funds only two divisions have been provided with nurses. The work of the nurses consists principally of (1) giving instructions for the care of children; (2) inspection of the municipalities, house-to-house, at least twice a month; (3) giving practical instruction in the management, confinement, labor, puerperium, and the care of infants; (4) inspection of school children, reporting children to be excluded and children needing care by the president of the sanitary division; (5) visiting at their homes the cases of pulmonary tuberculosis to give practical instructions in the care and mode of living of the sick and the prevention of propagation of the disease; (6) weekly visits to the jails to give instructions in personal hygiene to the female immates, reporting to the presidents of sanitary divisions the presence of dangerous communicable diseases; (7) to induce people in need of medical or surgical care to consult presidents of sanitary divisions; (8) to perform such other duties as may be required of them by the district health officer or president of sanitary division.

CEMETERIES.

At the beginning of the year there were 88 cemeteries in operation in the province. Three were closed and one established during the year.

MARKETS.

Of the 15 municipalities in the province, all have municipal markets with the exception of Misamis, Tagoloan, and Gingoog. The markets in Cagayan, Balingasag, Talisayan, Mambajao, Sagay, and Catarman are of strong material; those in Jimenez, Aloran, Oroquieta, Plaridel, Baliangao, and Initao of light materials. The municipalities of Misamis and Gingoog now have funds available for the construction of municipal markets.

WATER SUPPLIES.

In the poblacion of the municipality of Cagayan there is one artesian well, but in the barrios and other municipalities the sources of water supply are rivers, springs and wells.

PHYSICAL EXAMINATION OF SCHOOL CHILDREN.

The following table shows the diseases and physical defects found among school children during the year:

Disease.	Cases.	Disease.	Cases.
Dental caries	525	Conjunctivitis acute	19
Trachoma	287	Myopia	11
Tinea	287	Tubercular adenitis	6
Other diseases of the eye	281	Otitis double	6
Scabies	115	Suppurative otitis	2
Other diseases	55	Defects of hearing	2
Hypertrophied tonsils	30	Tuberculosis	1
Other contagious skin diseases	26		

Total pupils registered	7,078
Total pupils examined	4,988
Number of vaccinations made	1,686

FOOD CAMPAIGN.

Instructions were given presidents of sanitary divisions and sanitary personnel to take part in the campaign for increase of food production. During the last two months two sacks of seeds were distributed to the inhabitants who have promised to cultivate home vegetable gardens.

SULU.

COMMON DISEASES.

In the dispensaries.—Out of a total of 22,893 cases treated in the dispensaries the following diseases were the most prevalent:

Disease.	Cases.	Disease.	Cases.
Malaria	6,023	Abscess	287
Ascariasis	3,595	Boils	191
Scabies	2,392	Yaws	165
Wounds	1,352	Dysentery	149
Dhobie itch	1,233	Diarrhoea	131
Bronchitis	1,125	Rheumatism	92
Tinea imbricata	1,026	Gonorrhoea	56
Conjunctivitis	893	Pulmonary tuberculosis	49
Ulcers	777	Mumps	44
Constipation	478		
Neuralgia	381	Total	20,459

In the Sulu Public Hospital.—Among 637 total admissions the following diseases were the most common:

Disease.	Cases.	Disease.	Cases.
Malaria	152	Syphilis	7
Gonorrhoea	42	Gastroenteritis	7
Wounds	37	Ascariasis	7
Typhoid fever	32	Asthma	7
Beriberi	24	Rheumatism	6
Bronchitis	17	Mitral insufficiency	6
Dysentery	12	Hydrocele	6
Abscess	12	Ileocolitis	5
Abortion	10	Bronchopneumonia	5
Tinea imbricatae	10	Cerebrospinal meningitis	4

Of the 32 cases of typhoid fever reported above, 6 were admitted as typhoid carriers.

MUNICIPAL SANITATION.

Jolo.—1. Births attended by local native midwives.

2. An article by the municipal health officer, entitled "Care of Children," translated into Joloano and distributed.

3. Information on the extermination of mosquitoes distributed.

4. Unlicensed prostitutes cared for in the provisional contagious hospital released May 21 and the building used for temporary quarters of lepers.

5. Antityphoid vaccination carried out mostly among Government officials and employees and contacts.

6. Sewers, gutters, and curbs repaired.

7. Crude carbolic acid purchased for market disinfection.

8. A concrete water tank with two compartments constructed in the market for washing vegetables and fish, doing away with the practice of washing these food articles in the creek by the market, and thus avoiding possible sewage contamination.

9. New pumps in the wells in Busbus and San Reymundo installed by the district engineer.

10. A new modern market with sanitary toilet facilities nearing completion in Jolo.

11. The lot in front of the Sulu Public Hospital made into a park.

12. The new water supply from Gandasulig spring will soon be completed. This water supply is much superior to the old city supply although still exposed to contamination by surface drainage of surrounding regions. Steps are being taken to utilize the Asturias spring.

13. Animals slaughtered and inspected, 1,361.

14. Permits: House construction, 20; repairs, 25; restaurant, 7; destruction, 1; pig corral, 1; tiendas, 2; barber shop, 28; refreshment venders, 9; ice cream, 1.

15. House inspections, 34,352.

16. Birth certificates issued, 74; death certificates, 169.

17. Convictions for violation of health ordinances, 37; acquittals, 19; fines, ₱128.43.

18. Disinfections: Typhoid, 21; pulmonary tuberculosis, 8; gonorrhoea, 1; total, 30.

Provincial jail.—During the year one prisoner died of cerebrospinal meningitis. It is very probable that the prisoner had the disease already in the incubation period when admitted to the jail.

Four cases of bacillary dysentery were recorded, with no deaths. The disease was contracted before admission.

Sixty-five vaccinations were performed.

One hundred and ninety-six cases were treated and 1,963 treatments administered during the year.

The municipal health officer is in charge of the provisional sanitation. One sanitary inspector makes a daily visit to administer medicines and treat wounds of the prisoners.

The general health condition of the prisoners has been good.

Total number confined during the year, 797; average monhtly number, 76.

Prostitution.—About 16 unlicensed prostitutes were confined and treated in the provisional contagious hospital from January to May, when on account of leper collection and lack of funds the treatment of this class of women was discontinued.

There are now only two licensed Japanese prostitutes in Jolo.

Siasi.—One man is employed to clean the streets, in addition to the prisoners. An ordinance has been drafted to prohibit drying foul-smelling shark tails on the streets.

One cot with three white sheets has been provided for dispensary emergency cases.

The market in Simunol has been repaired. A new market building should be constructed; the present one affords shelter only from sunshine and is without satisfactory provision for sanitation. Animals are slaughtered on the streets.

Cemeteries.

Denomination.	Location.	Date of approval.	Administrator.
Roman Catholic	Jolo	Sept. 29, 1915	Father McDonough.
Municipal	Jolo	do	Municipal president.
Mohammedan	Busbus, Jolo	do	Sultan of Jolo.
Chinese	Jolo	March 29, 1916	Mr. Tandico.
Japanese	Jolo	Sept. 29, 1915	S. Kasiwagui.
Roman Catholic	Siasi	Oct. 4, 1915	Father McDonough.
Chinese	Siasi	Not approved	Chinese Kising and Quiñgan.

MARKETS.

In Jolo a new market of strong materials is nearing completion. It will be provided with sanitary toilet facilities.

In Parang a new market with galvanized-iron roof and concrete floor has been completed. It is provided with tables. No toilet accommodations have yet been constructed.

Markets with nipa roofs have been constructed in Indanan and Bilaan.

WATER SUPPLIES.

Jolo will soon be provided with spring water. The Gandasulig waterworks is nearing completion. It is also understood that the military waterworks in Asturias as soon as completed will be turned over to the Civil Government. The Asturias spring water is far superior to the Gandasulig spring water from the health standpoint. The Asturias spring should be piped separately and used for drinking water and the Gandasulig spring water for other purposes. The old city water supply should be closed.

New pumps have been installed in San Reymundo, Busbus and Maimbung.

The source of the proposed new water supply for Siasi, a spring in a hill about 3 kilometers above the town, has been inspected. The watershed is not inhabited and should be reserved by the Government.

It is proposed to provide a temporary pump well water supply in Tubig, Indañgan.

Physical examination of school children.

JOLO CENTRAL SCHOOL.

Disease.	Boys.		Girls.		Total.		Percentage.	
	1916	1917	1916	1917	1916	1917	1916	1917
Adenoids	43	15	9	6	52	21	17.33	6.00
Abscess	-----	1	-----	-----	-----	1	-----	0.2
Acne	-----	4	-----	1	-----	5	-----	1.37
Anemia	5	6	1	-----	6	6	2.00	1.68
Ankylosis	-----	1	-----	-----	-----	1	-----	.2
Bronchitis	-----	3	-----	2	-----	5	-----	1.37
Contusion	-----	2	-----	-----	-----	2	-----	0.5
Conjuctivitis	2	14	-----	4	2	18	.66	5.00
Dental caries	123	119	63	76	186	195	62.00	54.44
Eczema	-----	-----	-----	2	-----	2	-----	0.5
Furunculosis	-----	1	-----	-----	-----	1	-----	0.2
Harelip	1	2	-----	-----	1	2	.33	0.5
Malaria	-----	1	-----	-----	-----	1	-----	0.2
Multiple warts	-----	1	-----	1	-----	2	-----	0.5
Mumps	-----	1	-----	1	-----	2	-----	0.5
Otitis media	3	2	1	-----	4	2	1.33	0.5
Phitisis oculi	-----	2	-----	1	-----	3	-----	0.8
Pott's disease	-----	1	-----	-----	-----	1	-----	0.2
Pterygium	-----	3	-----	-----	-----	3	-----	0.8
Rhinitis	11	19	-----	4	11	23	3.66	6.46
Sprain	-----	1	-----	-----	-----	1	-----	0.2
Scabies	32	22	20	10	52	32	17.33	8.82
Strabismus	1	1	2	1	3	2	1.00	0.5
Stye	-----	1	-----	1	-----	2	-----	0.5
Tinea versicolor	40	50	6	15	46	65	15.33	18.15
Tonsils hypertrophied	155	121	71	75	226	196	75.33	54.57
Trachoma	-----	6	-----	4	-----	10	-----	2.80
Typhosis	-----	1	-----	-----	-----	1	-----	0.2
Wound	-----	4	-----	3	-----	7	-----	1.95
Yaws	8	1	-----	1	8	2	2.66	0.5
No defect found	-----	24	-----	7	-----	31	-----	8.67
Total defects found	424	406	173	208	597	614		

Total number of children examined, 1917 358

SIASI CENTRAL SCHOOL.

Disease.	Cases.	Disease.	Cases.
Carious teeth	65	Dhobie itch	5
Tenia versicolor	19	Eczema	1
Enlarged tonsil	19	Scabies	17
Chronic ulcer	5	No defects	5
Anemia	1		

Total number of defects found	132
Total number of children examined	89

LAPAK AGRICULTURAL SCHOOL.

Disease.	Cases.	Disease.	Cases.
Carious teeth	10	Scabies	2
Tenia versicolor	11	Stomatitis	1
Enlarged tonsil	1	Chronic ulcer	1
Malaria	3	No defects found	4

Total number of defects found	29
Total number of children examined	25

FOOD CAMPAIGN.

A municipal vegetable garden was established in connection with the food campaign September 25, under the supervision of the municipal president. Since November 21 the sale of products of the garden has averaged ₱1.80 per day, the vegetable sold being pechay, mostaza, radishes, okra, and guisantes. The following vegetables have also been planted: Papaya, camote, lichugas, col, amargozo, calabaza, gabe, tomatoes, pimientos, and various kinds of beans.

A municipal ordinance was passed limiting the price of fish, meats, fuel, and vegetables sold in the market, and a schedule of prices of principal commodities sold in the market has been passed by the municipal council.

Seeds were distributed by the provincial governor and the district health officer. A nursery is maintained in Jolo in charge of a graduate from Los Baños Agricultural School.

There are two agricultural schools in the province, the Indanan Farm School of the Episcopal Mission, and the Government Lapak Agricultural School.

SURIGAO.

COMMON DISEASES.

During the rainy season, malaria, bronchitis, and pulmonary tuberculosis prevailed; and during the dry season, dysentery, infantile gastroenteritis, and gastrointestinal diseases were common.

AGRICULTURAL COLONIES.

There are two agricultural colonies under the control of the division superintendent of schools, for the non-Christian tribes in Lianga and Hinatuan. These colonies are producing abaca, copra, camote, corn, bananas, and various kinds of vegetables.

CEMETERIES.

The following are the cemeteries in use in the province:

Municipal	16
Roman Catholic	21
Catholic Filipino Independent	11
Private	1
Total	49

The sanitary condition of the cemeteries in general is fair.

MARKETS.

With the exception of Dinagat, each municipality in the province has its own public market, their sanitary condition being supervised by the district health officer.

WATER SUPPLY.

In the municipalities of Surigao, Hinatuan, and Dapa, rain water is stored in Government and private tanks for drinking purposes. Steps are being taken to construct public water supplies in Placer, Bacuag, and Lianga.

PHYSICAL EXAMINATION OF SCHOOL CHILDREN.

The most common diseases found among school children are intestinal parasites, chronic malaria, and skin diseases.

FOOD CAMPAIGN.

The Health Service coöperated in the municipality of Surigao with the work of the women's club in inducing people to establish home vegetable gardens. In the other municipalities the sanitary personnel was directed to coöperate with the municipal presidents in this campaign. Seeds were freely distributed for this purposes.

ZAMBOANGA.

COMMON DISEASES.

The following are the most common diseases registered in the different municipalities of the province.

Disease.	Cases.	Treatments.
Malaria	1,248	2,343
Intestinal parasites	361	603
Skin disease	196	698
Dysentery	70	270
Tuberculosis, pulmonary	32	37
Diarrhoea	24	70
Beriberi	19	32
Gastroenteritis	5	5

Diarrhoea, dysentery, gastroenteritis, and intestinal parasites are the most common diseases registered among children, and tuberculosis, beriberi, and malaria among adults.

MUNICIPAL SANITATION.

Efforts have been made to adopt the use of fly-proof sanitary pails in all the municipalities of this province with the exception of Lubuñgan where the Antipolo pail system will be in operation. Since the latter part of the year, the Antipolo system has been put into effect in the barrios of the municipality of Zamboanga, and its installation is required in all new houses costing not less than ₱100.

The filling of the canal in the city of Zamboanga will soon be completed. Many low lands serving as breeding places for mosquitoes have been filled. The construction of houses is regulated by a sanitary ordinance.

The collection of rubbish and garbage in the municipality of Zamboanga has been considerably improved. Attention has also been paid to improvement of the collection and disposal of night soil.

The following sanitary ordinances were put into effect during the year:

1. Re prevention of epidemic diseases.
2. Re keeping buildings and promises in sanitary condition.
3. Regulating the number of persons to occupy buildings.
4. Re collection and disposal of waste refuse.
5. Tenants to be provided with garbage receptacles.
6. Sanitary regulation of hotels and other public buildings, bakeries, dairies, laundries, and barber shops.
7. Regulating the manufacture and sale of food and drinks.
8. Defining and prohibiting injurious and pernicious trades.
9. Regulating the care of domestic animals.
10. Prohibiting public nuisances.

AGRICULTURAL COLONIES.

The Lamitan Agricultural Colony now consists of ten families. Provincial prisoners serving a sentence of less than 8 months are sent to work in this colony.

Malaria occurred in the colony and was promptly controlled by the dispensary attendant of Lamitan.

CEMETERIES.

The following table shows the cemeteries now in use in the province:

Denomination.	Location.	Date approved.
Evangelical Filipino Christian	Tetuan	Oct. 4, 1915
Roman Catholic	Baliwasan	Do.
Do	do	Aug 7, 1916
Do	Ayala	Nov. 4, 1915
Do	Mercedes	Do.
Do	Banonong, Dapitan	Nov. 26, 1915
Do	Dipolog	Do.
Do	Lubuñgan	Do.
Do	Talon-talon	Sept. 7, 1916
Do	Manicahan	Oct. 24, 1916
Municipal	Kuruan, Zamboanga	Oct. 4. 1915
Do	Dapitan	Nov. 4, 1915
Do	Dipolog	Oct. 11, 1916

MARKETS.

The municipalities of Zamboanga, Dapitan, Dipolog, and Isabela de Basilan are provided with markets, the one in Dapitan having been completed two months ago. There is a project to construct a municipal market in Lubuñgan. Two persons are engaged to clean the market of Zamboanga under the supervision of a sanitary inspector. All foodstuffs are properly protected from flies. The market is provided with a water supply.

WATER SUPPLIES.

The new public water supply of Zamboanga begun in 1916 was completed about the middle of 1917. Its source is in Pasonanca and the water is piped to the city of Zamboanga. The result of the bacteriological analysis of the water is as follows: Bacteria per c. c., 620; bacillus coli negative in 5 c. c.; no pathogenic microörganisms, ciliates, and flagellates and water amoeba are present; this water is potable.

The municipality of Isabela de Basilan has a good public water supply. The water comes from the mountains and is collected into a reservoir from which the town is supplied. The municipalities of Dapitan, Dipolog, and Lubuñgan are using surface well water supplies.

Physical examinations of school children.

ZAMBOANGA (282 pupils).

	Boys.	Girls.	Total.
Myopia	1	0	1
Tonsils typertrophied	4	4	8
Dental caries	66	38	104
Defects of hearing	1	0	1
Tinea versicolor	9	0	9
Anemia	11	6	17
Pimples	8	0	8
Total	100	48	148

DAPITAN (198 pupils).

Herpes	1	0	1
Dental caries	4	3	7
Discharge from one ear	2	1	3
Tinea	5	1	6
Total	12	5	17

DIPOLOG (247 pupils).

Scabiosis	2	2	4
Herpes	3	0	3
Dental caries	8	5	13
Adenitis, tubercular	3	2	5
Tinea	4	1	5
Bodily deformities	0	1	0
Total	20	11	31

LUBUNGAN (233 pupils).

Yaws	7	1	8
Adenitis, tubercular	2	0	2
Total	9	1	10

SUMMARY (960 pupils examined).

Zamboanga	100	48	148
Dapitan	12	5	17
Dipolog	20	11	31
Lubuñgan	9	1	10
Total	141	65	206

FOOD CAMPAIGN.

The entire sanitary personnel of the Service coöperated with the local authorities in the campaign for increased food production.

Summary of puericulture work done by the district nurse and midwives in the municipality of Zamboanga.

Women given instructions during pregnancy	236
Women attended by local "parteras" and visited by midwives	46
Women attended during labor	115

Number of visits during pregnancy	573
Number of visits after labor	1,930
Average number of visits per day	7
Number of women at present receiving instructions on nursing and on hygiene of pregnancy	29

Vaccinations.

Province.	Vaccinations.	Inspections.	Positive.	Negative.
Agusan	11, 525	1, 607	572	1, 035
Bukidnon	847	847	655	192
Cotabato	5, 965	3, 967	3, 358	1, 609
Davao	1, 308	1, 265	724	541
Lanao	3, 567	2, 702	1, 311	1, 391
Misamis	17, 905	13, 481	7, 298	6, 183
Sulu	3, 315	1, 922	694	1, 228
Zamboanga	40, 257	17, 737	6, 351	11, 386
Total	84, 689	43, 528	19, 963	23, 565

Denographic statistics.

BIRTHS REPORTED.

Province.	Americans.	Filipinos.	Europeans,	Chinese.	Other Asiatics.	Total.	Rate per 1, 000 population.
Agusan		529				529	24. 52
Bukidnon		355				355	16. 95
Cotobato		346				346	35. 05
Davao		882		2	1	885	20. 98
Lanao		170				170	15. 90
Misamis		5, 898				5, 598	44. 47
Sulu	1	106		3	2	112	4. 84
Surigao		1, 392				1, 392	14. 81
Zamboanga	1	1, 357	5	2		1, 365	16. 75
Total	2	11, 035	5	7	3	11, 052	25. 32

DEATHS REPORTED.

Province.	Americans.	Filipinos.	Europeans.	Chinese.	Other Asiatics.	Total.	Rate per 1, 000 population.
Agusan		609				609	28. 23
Bukidnon		126				126	6. 01
Cotobato		116		3	1	120	12. 25
Davao	1	736	1	9	73	820	19. 44
Lanao	2	101	1	1		105	9. 80
Misamis		3, 686		3		3, 689	27. 82
Sulu		220		18	6	244	10. 55
Surigao		826	1	3		830	8. 83
Zamboanga	2	1, 389	2	15	3	1, 411	17. 31
Total	5	7, 809	5	52	83	7, 954	17. 76

SUMMARY.

The services of prominent Mohammedans were utilized as sanitary inspectors. It is through these Mohammedans that the execution of difficult sanitary orders has been carried out, thus avoiding opposition on the part of the people. Whenever possible the Mohammedan sanitary inspectors are assigned to Mohammedan population.

The Christian dispensary sanitary inspectors, besides attending to the dispensaries, perform the duties of municipal district sanitary inspectors, making regular inspections of the neighboring barrios. Some of the dispensary attendants have acquired great tact in dealing with the Mohammedans and pagans, and the natives are beginning to realize that the mission of these attendants is largely for their own benefit and welfare.

The fact that seriously ill patients are brought to the hospitals from remote islands and districts shows that their benefits have come to be recognized by the people. Compared with previous years the number of patients admitted to the hospitals is increasing, due largely to the increase of Mohammedan patients.

The dispensaries are provided with the necessary medicines and surgical supplies for the relief of the common diseases which afflict the Mohammedan people. The dispensaries are becoming popular. Deformities and diseases which they are accustomed to see last many months are healed in a comparatively short time. The Mohammedan people are rapidly becoming accustomed to call on dispensary attendants to attend sick members of their families, and many times these attendants have to travel many miles to answer a sick call.

Through the activities and constant association of the health personnel with the natives, the people are inspired to higher standards of living. They become ambitious to live in houses provided with as much comfort and cleanliness as the houses they see occupied by the Christians. They are beginning to realize the importance of good water supplies.

While there are still a number of Mohammedans and pagans who can be seen passing along the public roads wearing ragged and dirty clothes, the number of people who have improved their personal cleanliness has greatly increased. This is largely due to association with their Christian fellow citizens.

In the outstations construction of dispensary model houses has been initiated for two reasons: To provide a place for dispensaries and emergency cases, and at the same time to serve as model homes for the people to imitate.

REPORT OF THE OFFICE OF SANITARY ENGINEERING.

(Edward L. Barber, *Sanitary Engineer.*)

The work of this office may be divided into the following sections:

1. Sanitary supervision of building construction, city of Manila.
2. Execution and enforcement of structural sanitary orders, including all orders for filling in low lands, city of Manila.
3. Plumbing installation and inspection, city of Manila.
4. Sanitary and construction projects, provincial.
5. Drafting department.
6. Construction work, city of Manila.
7. Construction work, Culion Leper Colony.

MANILA.

There is appended a tabulation showing the amount of routine work performed in the city of Manila and the provinces. During the year 350 sanitary orders were issued, subdivided under the following heads: Minor orders, sewer orders, vacating orders and filling orders; a total of 328 orders were completed; building projects to the number of 2,647 were acted upon; and 829 separate plumbing projects were handled in this office, the total cost of the latter amounted to ₱178,742.75.

The question of illegal construction has been one of vital importance during the past year. This office reported 60 cases to the city engineer, 16 of which were completed in accordance with the municipal ordinances. However, this number does not represent the actual number of cases, which amounted to more nearly one thousand. The policy of giving the offenders a small fine in the municipal courts, the amount of which in most cases was less than the sum necessary to obtain a building permit, tended to encourage instead of discourage illegal construction. The necessity of proper legislation dealing with the offenders has led to the passage of an act which gives the city engineer the necessary authority to remove illegal construction, and it is believed that this will produce a solution of a problem that has long caused trouble to both the Philippine Health Service and the city engineer's office.

The constantly increasing population has been one of the causes of the illegal construction in that there at present exist within the city limits very few available sites where the laboring class can construct their homes. This is due to the fact that those sites which can be approved by this Service are held at such high rates of rental that the poor man with a small income cannot afford to construct his home in these places. The other available sites are low swampy lands which cannot be approved until the necessary filling has been made and the proper streets put in. Consequently, the tendency has been to crowd construction in certain districts in Manila which are already badly overcrowded. With the small force of inspectors available, it has been practically impossible to keep up with this work as it requires someone constantly on the ground. This problem can best be solved by the extensive filling in of all lowlands in these districts, a plan for which is already being considered in conjunction with the city engineer. During the past year approximately 50,000 square meters of low lands have been filled in the city as a result of the issuance of filling orders, and a marked improvement can be seen in several districts which had heretofore been in a very insanitary condition.

During the year this office has undertaken considerable construction work using the model house material (cement slab and shingle) which was developed at Mariveles during the year 1916. The first building constructed was a small model house for an exhibit at the 1917 Carnival. The construction work was commenced on January 12 and completed on January 26. This building was later removed to San Lazaro and is now being used as quarters for male nurses.

On January 15 work was commenced on a large tuberculosis hospital at San Lazaro of the same material. It was completed on April 14. This project was handled in accordance with Act No. 2671, Philippine Legislature. All the design, construction work, and purchase of supplies and material were performed by this office in accordance with the above Act. This building has proved to be very satisfactory for the purpose for which it was intended and the arrangement has proved to be very practical.

On January 15 this office assumed charge of the work of reconstructing a large Spanish building known as Casa Quinta located in San Pedro Makati, for the use of the Government Orphanage. This required the entire alteration of the building, installation of modern plumbing fixtures and septic tank, and the installation of a deep well together with pump and tanks. This work was completed on February 18; this project also coming under Act No. 2671.

On April 23 work was commenced on the construction of quarters for the superintendent of the Government Orphanage, this building being completed on June 4.

During the year several of the model houses were constructed—one at Malabon and three in Manila; the first being used as a club house, the second two as residences, and the third is used by the golf professional of the municipal golf course. All of these buildings were built under the supervision of this office.

Considerable time has been devoted to placing the hospital ship "*Busuanga*" in commission. This required the completion of the alterations to the ship, the obtaining of the necessary equipment and the hiring of the personnel. Several trial trips were made around the bay, one to Mariveles and one to Culion. Each trip showed minor defects, and it was not until December 11 that she departed for duty in the Department of Mindanao and Sulu.

During the past year this office has acted as engineer for the municipal golf committee in laying out and making improvements on both the old nine holes and the new nine holes.

PROVINCIAL.

The following provincial trips were made:

1. Calumpit, Bulacan; for provincial sanitary installation.
2. Sibul Springs, Bulacan; installation of lighting system.
3. Mariveles, Bataan; sanitary installation at market.
4. Antipolo, Rizal; sanitary installations.
5. Culion, Palawan; construction.

During the past year funds have been insufficient for very much construction at Culion. During the year inspections were made which required the removal of some two hundred nipa houses to better locations. This necessitated the laying out of a new barrio, which at the present time, is nearly filled with very good houses which have the proper intervals between and the proper streets. During the year one model house was constructed of the new cement slab material, and one leper clubhouse was nearly completed. This building is being constructed of the sanitary house material and the work has been done entirely by the lepers.

Statistical information by districts.

[Manila only.]

	Health district—					
	No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	Total.
Orders pending December 31, 1916	39	167	14	53	15	288
Orders issued:						
Minors orders	22	40	10	8	3	83
Sewer orders	3	46	6	4	6	65
Vacating orders		72		19		91
Filling orders	7	1	47	51	5	111
Total	32	159	63	82	14	350
Grand total	71	326	77	135	29	638
Orders completed:						
Minor orders	18	33	9	14	7	81
Sewer orders	14	67	7	30	5	123
Vacating orders		103		2		105
Filling orders	3	1		11	4	19
Total	35	204	16	57	16	328
Orders canceled:						
Minor orders	3	1		2		6
Sewer orders		6		2	1	9
Vacating orders		7				7
Filling orders				1	1	2
Total	3	14		5	2	24
Grand total	38	218	16	62	18	352
Orders pending December 31, 1917:						
Minor orders	9	16	4	2	5	36
Sewer orders	17	69	10	4	1	101
Vacating orders	1	23		22		46
Filling orders	6		47	45	5	103
Total	33	108	61	73	11	286

Statistical information by quarters.

[Manila only.]

	First quarter.	Second quarter.	Third. quarter.	Fourth quarter.	Total.
Orders pending December 31, 1916					288
Orders issued:					
Minor orders	13	26	14	30	83
Sewer orders	11	19	14	21	65
Vacating orders	47	32	12		91
Filling orders	19	13	77	2	111
Total	90	90	117	53	350
Grand total					638
Orders completed:					
Minor orders	17	26	11	27	81
Sewer orders	19	67	19	18	123
Vacating orders	32	56	8	9	105
Filling orders	3	4		12	19
Total	71	153	38	66	328
Orders canceled:					
Minor orders		4	1	1	6
Sewer orders	4	3	2		9
Vacating orders	7				7
Filling orders	1		1		2
Total	12	7	4	1	24
Grand total					352
Orders pending December 31, 1917:					
Minor orders					36
Sewer orders					101
Vacating orders					46
Filling orders					103
Total					286

Statistical information by districts.

[Manila only.]

	Health district—					
	No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	Total.
Strong material plans approved:						
New buildings including additions and alterations	82	211	129	77	45	544
Permits for minor building construction:						
Approved	63	134	62	32	21	312
Disapproved	21	27	10	7	5	70
New buildings completed	27	84	27	30	16	184
Light and mixed material structures:						
Permits approved			329	597	266	1,192
Permits disapproved			76	170	99	345
Total number of building projects passed upon	193	456	633	913	452	2,647

NOTE.—Sixty cases of illegal constructions were reported to the city engineer, sixteen of which were completed according to ordinances.

Statistical information by quarters.

[Manila only.]

	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.
Strong material plans approved: New buildings including additions and alterations	138	105	167	134	544
Permits for minor building construction:					
Approved	77	78	78	79	312
Disapproved	25	15	20	10	70
New buildings completed	63	49	38	34	184
Light and mixed material structures:					
Permits approved	168	130	470	424	1,192
Permits disapproved	33	35	159	118	345
Total number of building projects passed upon	504	412	932	799	2,647

Statistical information by districts.

[Manila only.]

	Health district—					
	No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	Total.
Plumbing permits issued	154	412	96	98	67	827
Plumbing projects completed	139	409	114	109	59	830
Premises connected to the sanitary sewer to January 1, 1917	1,275	2,124	760	294	280	4,733
Premises connected during 1917	39	127	31	35	16	248
Total December 31, 1917	1,314	2,251	791	329	296	4,981

Statistical information by quarters.

[Manila only.]

	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total.
Plumbing permit issued	207	228	191	201	827
Plumbing projects completed	198	283	166	183	830
Premises connected to the sanitary sewer to January 1, 1917					4,733
Premises connected during 1917	62	89	52	45	248
Total December 31, 1917					4,981

Statistical information by districts.

[Manila only.]

Health district.	Prosecutions.		
	Convictions.	Dismissals.	Amount of fines.
Intramuros			
Meisic	2		₱20.00
Sampaloc			
Tondo	1		30.00
Paco			
Total	3		50.00

Statistical information by quarters.

[Manila only.]

Quarter.	Prosecutions.		
	Convictions.	Dismissals.	Amount of fines.
First			
Second			
Third	3		₱50.00
Fourth			
Total	3		50.00

DRAFTING PROJECTS.

Project number.	
1, 23.	Portfolio map (Manila), 65 per cent completed.
6.	Blue printing, 572 copies made (intervals).
43.	Work report, completed at the end of every month.
91.	Plotting new streets and changing street names on maps, city of Manila, at intervals.
172.	Map of Manila showing cholera cases, at intervals, during cholera outbreak.
266.	Lettering nurses' certificates, 65 certificates completed.
324.	Maximum and minimum temperature taken daily from January, 1911 (continuous), seven rolls of cross-section paper completed, 1911–1917, inclusive.
360.	Realteration to project No. 349 (provincial toilet), 100 per cent completed.
361.	Plan of a model house, discontinued.
362.	Diagram showing expectation of life, proportion of living children, 100 per cent completed.
363.	Charts showing mothers in the child bearing period, 100 per cent completed.
364.	Measuring hospital ward, San Lazaro Hospital, 100 per cent completed.
365.	Septic tank for the standard provincial toilet, 100 per cent completed.
366.	Sketch map showing distribution of malaria, tuberculosis, and dysentery in Antipolo, 100 per cent completed.
367.	Orphan's asylum, 100 per cent completed.
368.	Tuberculosis hospital ward, San Lazaro Hospital, 100 per cent completed.
369.	Signs for the 1917 Carnival, 100 per cent completed.
370.	Map of municipality of Obando, 100 per cent completed.
371.	Drawings of milk receptacle and holder with container, 100 per cent completed.
372.	Chart showing the value of foods in amounts necessary for an adult, 100 per cent completed.
373.	Plan of catch basin for San Lazaro Hospital, 100 per cent completed.
374.	Diagram showing cholera cases in 1916, 100 per cent completed.
375.	Diagrams of computation for the design of proposed hospital ward, San Lazaro Hospital, 100 per cent completed.
376.	Superintendent's quarters, Government Orphanage, 100 per cent completed.

377. Charts for the Sanitary Commission, 100 per cent completed.
378. Municipal golf course, 100 per cent completed.
379. Preliminary plan of proposed ward for aged and invalid people, 100 per cent completed.
380. Proposed ward for insane, 100 per cent completed.
381. Alteration to project 358 (provincial toilet), 100 per cent completed.
382. Measuring and sketching accessoria, interior of Calle Santa Elena, 100 per cent completed.
383. Retracing plan of barrack building for Mariveles, 100 per cent completed.
384. Plan of physician's residence, Culion, 100 per cent completed.
385. Correcting Health Bulletins, about 2,600 copies corrected.
386. Plotting locations of new buildings on topographical map of Culion, 100 per cent completed.
387. Plan of schoolhouse for Culion, 100 per cent completed.
388. Plan of a residence for Culion, 100 per cent completed.
389. Computing areas of all districts, city of Manila, 100 per cent completed.
390. Alteration to project No. 384, 100 per cent completed.
391. Alteration to project No. 387, 100 per cent completed.
392. Enlarging sectional view of a ram, 100 per cent completed.
393. Trusses for standard hospital, type A, 100 per cent completed.
394. Diagram of proportion of deaths due to preventable causes, 1914, 100 per cent completed.
395. Tracing a design for scavenger's hut, 100 per cent completed.
396. Tracing first floor plan of insane ward, San Lazaro Hospital, 100 per cent completed.
397. Estimate for the modified model sanitary house (golf course), 100 per cent completed.
398. Sketch of a provincial hospital, 100 per cent completed.
399. Enlarging Moro writings, 100 per cent completed.
400. Estimate for a proposed building at the University campus, College of Engineering, 100 per cent completed.
401. Plan of property of Antituberculosis Society, 100 per cent completed.
402. Computing areas of uninhabited parts of city of Manila.
403. Realteration to project No. 358 (standard provincial toilet), 100 per cent completed.
404. Measuring accesorias Nos. 336–344 Ilangilang, and 337–345 Santo Cristo, 100 per cent completed.
405. Setting stakes for foundation lines of model house at the golf course, 100 per cent completed.
406. Standard desk for the Philippine Health Service, 100 per cent completed.
407. Sketch showing process of construction of Antipolo system, using bamboo lining, 100 per cent completed.

REPORT OF THE OFFICE OF HYGIENIC AND INDUSTRIAL DEVELOPMENT.

[MAMERTO TIANCO, *Acting Chief of Office.*]

ACTIVITIES.

During the year for which this report is made the activities of this office were conducted along the same lines as in the preceding year, and the work undertaken has been a continuation of the program instituted for the attainment of its mission as outlined in the report for 1916.

CAMPAIGN FOR SANITARY ABODES, PROPER HANDLING OF FOODSTUFFS AND DRINKING WATER AND PROPER DISPOSAL OF WASTES AT THE CARNIVAL OF 1917.

One of the most noteworthy opportunities which this office has had to show to the public in a practical manner the sanitary methods which it urges was the Carnival held during the period of February 3 to February 11, 1917. At this Carnival the Service participated by exhibiting a sanitary model house on which cement shingles and slabs reinforced with bamboo weave, the newly invented materials, were employed, the management of the exhibition being under the direction of this office, which planned its campaign for the occasion to carry out the following program:

1. To induce the people to adopt sanitary model houses as a substitute for nipa houses in future construction of their homes.
2. To show them how a home should be arranged to live in a sanitary manner and within the means of the ordinary family.
3. To make people see how easily a person can install a proper and effective disposal system of human wastes and refuse; to teach them the proper manner of handling drinking water and of keeping foodstuffs away from flies and bugs and protecting them from dust, and the advantages of, and necessity for, such measures.
4. To make every effort for the adoption of a balanced diet among Filipinos.
5. To demonstrate the manner of making the cement slabs and shingles of the new materials used in the house and thus induce the people to develop a new industry which will have a direct bearing upon the improvement of the housing conditions in the Islands.

The house had five rooms, namely, reception and dining room combined, sala and sleeping room combined, dormitory, kitchen, and porch consisting of veranda, toilet and bathroom.

The Antipolo system of toilet (for low ground), a cheap but effective system devised for provincial towns, was installed; consisting of a pit 1.5 meters deep, 2 meters wide and 2 meters long, a capacity of 6 cubic meters, sufficient to last for five years for a family of 5 persons. The soil was found to be of a kind of stiff clay, so the sides were not lined. The edges of the pit were elevated one meter above the surface with earth held firmly between two slabs of timber 20 centimeters apart from each other, the inner timber being about 17 centimeters lower than the outer one. The pit was securely covered with a board cover with two holes, one in the middle to admit the soil pipe connected with the seat, and the other in one side to admit the ventilating pipe, and the top was filled with earth, to the level of the outer timbers. The soil pipes used in this toilet were of vitrified clay of the *tapayan* class burned in the kiln of Mr. Santiago Jimenez of San Pedro Macati. The joints were sealed with cement. As the wooden cover was strong enough to withstand the weight of the pipes it was found unnecessary to tie them with wire and suspend them from the floor joists. The seat was that of the Philippine Health Service pail system, the cover being self-closing. With this privy it was shown that human excreta could be disposed of safely as it was made fly and mosquito proof.

The bath was lined with sheets of galvanized iron and provided with a hole in the center connected by a pipe with the pit. It was explained to the public that the hole should be tightly covered when not being used for the escape of waste water, to avoid the exhalation of gases from the pit, and if possible a trap should be used with a cleanout place in case dirt obstructs the water passage. These sanitary connections showed the manner of disposing safely of waste water from the bathroom. A galvanized-iron water receptacle with a hole in the middle connected with a pipe leading to the pit was put in the back porch for the purpose of showing how waste water from the kitchen should be disposed of safely, doing away with the pusalian or dirty pool usually located under the batalan of Filipino houses. It was shown that this arrangement does away with breeding places for the flies and mosquitoes which exist in every town. A galvanized-iron smoke hood was connected with the chimney and a table made of ordinary lumber and covered with clean earth to serve as a basement for the Filipino stove was placed just under the hood.

It was thought best to equip the house in the usual Filipino fashion and use the most common Filipino furniture and utensils as far as possible, in order to attract the attention of visitors to the advantages of the house itself and its arrangement, rather than to the fine furniture, and to the simplicity of its surroundings, and to impress upon their minds the fact that the problem was one directly affecting them and that its solution was within their power, and to create in them a desire for homes of the same type.

The equipment and furniture of the house were arranged as follows: A table was placed in the middle of the reception room, which also served as a dining room, ready for the serving of a meal for four persons, with a spoon, a fork, a knife and a drinking glass for each person. The idea was to have the people understand that in eating, spoon, fork, and knife must be used; that eating with the fingers is not sanitary; that each person should have his own drinking glass, as it is not sanitary to use only one glass for several persons. Some foodstuffs were kept in a self-closing food cover. When showing this cover the attention of the visitors was called to the fact that it was self-closing as it should be closed all the time unless food was actually being put in or taken out, so that insects will have no opportunity to gain access to the food. The food value of each article was also explained, also the necessity for a balance diet. On account of the fact that the space was so crowded with visitors it was impossible to make actual demonstrations of preparing Filipino meals in a scientific manner, as was planned.

Water containers with spigots were used, also a dipper with a handle, and it was made clear to the people that water from a container should never be withdrawn with a dipper held at the brim by the hand as the water may easily be contaminated in this way.

The bedroom was furnished with a bamboo bed provided with a mosquito net to show that one should always sleep under a mosquito net for protection against malaria.

In order to give the public a clear idea of how the newly invented materials used in the house were manufactured samples of the molds used for making the shingles and slabs were exhibited and actual demonstration of the manner of making them was given.

Cards containing the following data in English, Spanish, and Tagalog were nailed to the walls of the house:

[Model.]

SANITARY MODERN HOUSE.

Substitute for nipa—Fireproof—Durable (25 years)—Nice and cool—Cheap—Fire insurance rate cheaper—No extensive repairs necessary—Beautiful—Attractive.

ADVANTAGES OVER A NIPA HOUSE.

Modern house.	*Nipa house.*
Incombustible.	Easily ignitable.
Durable (25 years).	Durable (10 years).
No extensive repairs required.	Yearly repairs necessary.
Quickly repaired.	Takes time to repair.
Easily cleaned.	Difficult to clean.
No place for bugs.	Plenty of nooks for bugs.
Depreciation very small.	Depreciates quickly.

Comparatively cheap.	*Comparatively dear.*	
This model costs approximately ₱500.	Good finished nipa house of same size costs approximately	₱350
Will last 25 years.	May last 10 years and will need at least 25 pesos yearly for repairs from the fourth year, or for the last 6 years of its existence........................	150
No extensive repairs necessary.	Oiriginal cost	350
	Total in 10 years........	₱500
	And the house is beyond repair, new one must be built. Total minimum cost of two nipa houses, ₱1,000.	
	Sanitary house has at least five more years of useful life.	

Shingles and slabs of this modern house.

These shingles and slabs were made by schoolboys at Mariveles.

Shingles weigh from 850 to 1,000 grams each.

Slabs weigh (½ inch thick) about six pounds per square foot.

Shingles and slabs are made with cement, sand, ipa, reinforced with bamboo.

First-class mixture is one of cement, one of sand, and one of ipa.

Second-class mixture is three of cement, five of sand and two of ipa.

First-class mixture will yield for one barrel of cement from 360 to 400 shingles.

Second-class mixture will yield for 1 barrel of cement from 450 to 500 shingles.

Cost per shingle excluding labor is approximately 3 centavos each.

Cost of slab of 2 by 6 feet is from 70 to 80 centavos excluding labor.

Two thousand four hundred shingles allowing for breakage are sufficient for a model house of 6 meters wide and 10 meters long.

One hundred and five slabs for sides and partitions.

This house required five and one-half barrels of cement for roofing and 6 barrels for sides and partition.

Shingles and slabs are made in moulds.

Shingles and slabs are cured in water after being taken from the moulds.

The Bureau of Science has been requested to make a test as to the breaking strength, permeability, average dry weight, average water holding capacity of the shingles as well as the tensile strength of the mixture employed for making the shingles and slabs, and the following is the result of the examination:

The result of the tensile-strength test of the mixture of cement, ipa, and sand employed for making the shingles and slabs is the following: seven days, 255 kilos.

The opinion of the chief of the Fire Department as to the fire resisting qualities of the house exhibited was requested and his reply was made public by posting a card containing it and which read as follows:

> The chief of the Fire Department says of this house that it "has better fire resisting qualities than the houses now built of hard woods with iron roofs. It should be put in the same class as houses composed of brick with hard wood frames and tile roofs. It is the opinion of the undersigned that if all bamboo and nipa houses were replaced by buildings along the lines of this sanitary model, Manila would never again see a bamboo conflagration in light material districts."

Number of persons who visited the house during the carnival was 149,908, as follows:

February	3, first day, Saturday	13,119
	4, second day, Sunday	26,691
	5, third day, Monday	7,581
	6, fourth day, Tuesday	8,798
	7, fifth day, Wednesday	9,985
	8, sixth day, Thursday	14,936
	9, seventh day, Friday	9,862
	10, eighth day, Saturday	26,829
	11, ninth day, Sunday	32,107
Total		149,908

The house was open to the public day and night.

During the Carnival several visitors offered to purchase the house on the spot.

Due to the numerous demands for the plans of the house and instructions relative to the manufacture of the cement shingles and slabs, a bulletin containing this information, entitled "Philippine Health Service Bulletin No. 16, Plans and Instructions Relative to the Construction of the Sanitary Model House," was prepared by this office and printed in English, Spanish, and Tagalog, several thousand copies of which have been distributed.

Several buildings of this class of construction have been erected during the year, among which may be mentioned the Malabon Women's Club headquarters, and a residence at Angeles, Pampanga.

WOMEN'S CLUBS.

Women's clubs were organized during 1917 in the following towns: Albay, Albay; Antique, Antique; Orion, Bataan; Baclayan, Candijay, Leon, and Corella, Bohol; Obando, Bulacan; Imus. Maragondon, and Silang, Cavite; Majayjay, Nagcarlan, and San Pablo, Laguna; Calapan and Naujan, Mindoro; Bacolod, Bago, Binalbagan, Cadiz, Escalante, Himamaylan, Hinigaran, Ilog, Isabela, Kabancalan, La Carlota, Pontevedra, San Carlos, Sagay, Saravia, Valladolid, and Victorias, Occidental Negros; Tayasan, Sibulan, Bais, Manjuyod, Lazi, Maria, and Guijulngan, Oriental Negros; Mangatarem, Dagupan, Lingayen, and San Nicolas, Pangasinan; Antipolo, Jalajala, and Montalban, Rizal; Unisan and Torrijos, Tayabas; Pontevedra, Capiz; Laoang, Santa Rita, and Calbiga, Samar; and Jolo, Sulu.

These clubs have resulted in greater interest in their towns in modern methods of living, sanitary improvements and the proper care and feeding of babies, and in coöperation between local authorities and citizens in carrying out projects for the general welfare. Many of these societies have formed *centros de puericultura* whose purpose is the reduction of the existing excessive infant mortality in the Islands.

On February 23, 1916, the Philippine Legislature enacted the following Act:

[ACT NO. 2633.]

AN ACT APPROPRIATING THE SUM OF ONE MILLION PESOS FOR CERTAIN WORK IN RELATION TO THE PROTECTION OF EARLY INFANCY IN THE PHILIPPINE ISLANDS, INCLUDING THE ESTABLISHMENT OF "GOTAS DE LECHE."

By authority of the United States, be it enacted by the Philippine Legislature, that:

SECTION 1. There is hereby appropriated, out of any funds in the Insular Treasury not otherwise appropriated, the sum of one million pesos, which shall not be set up in the books of the Auditor until alloted administratively, for expenditure, in the discretion of the Governor-General, in the provinces organized under Act Numbered Eighty-three, and the Provinces of Palawan, Mindoro, and Batanes, the Department of Mindanao and Sulu, and the special provinces of Northern Luzon, to assist in the campaign for the protection of early infancy, including the establishment of "Gotas de Leche" wherever it may be feasible and necessary: *Provided, however,* That in order that a province, municipality, or township may obtain the aid herein authorized, it shall be required to contribute, either by appropriation out of its own funds, or by voluntary subscription, or in any manner other than by direct or indirect aid of the Insular Government, a sum equal to that which the Governor-General is ready to invest in such province, municipality, or township: *Provided, further,* That the technical plan of the work contemplated shall be approved by the "Liga Nacional para la protección de la Primera Infancia:" *And provided, finally,* That in connection with such work, any officer or employee of the Insular, provincial, and municipal governments shall serve gratuitously when so directed by the Governor-General, and any officer or employee so directed who fails to render satisfactory service may be summarily removed.

SEC. 2. The Governor-General shall include in his annual message to the Philippine Legislature a detailed report of the work for the protection of early infancy performed in accordance with the provision of this Act.

SEC. 3. This Act shall take effect on its passage.

In view of this law many women's clubs, after having raised sufficient funds by voluntary contributions of theis members and other persons, applied for the aid mentioned therein, stating that their organizations would undertake a campaign against infant mortality in accordance with the plan set forth in the circular of the Liga Nacional para la Protección de la Primera Infancia issued April 15, 1916. In the beginning requests of this nature were not considered as the interpretation given to the statute was that the benefits provided in the Act could be accorded only to provincial, municipal, and township governments or institutions. A circular of instructions relative to the application of the provisions of Act No. 2633 issued by the Acting Secretary of Public Instruction made it plain that requests for Insular aid provided in the said Act should be made by the province, municipality, or townships and not by the associations themselves. For this reason and in order to protect Government interests, it was required that the work of these institutions be placed under the auspices of the province, municipality, or township where such institution has its headquarters; in accordance with which the by-laws provide that the treasurer shall be the provincial, municipal, or township treasurer, as the case may be, and the secretary the local health officer; and it is required that before filing an application for Insular aid the treasury shall contain an amount at least equal to the aid requested.

The following extract from the articles of incorporation of the *centros de puericultura,* translated from the Spanish form given in the circular of the Acting Secretary of Public Instruction, gives an idea of the sphere of action of these institutions:

2. That the purposes for which this corporation is formed are to educate and instruct mothers in the care of their children, and to this end, the corporation must:

(*a*) Establish a clinic in which children under two years of age may be examined and treated to improve their health and growth, as well as to give proper instructions to expectant mothers with regard to their health and to the care of their babies beginning from the date of their births.

(*b*) Employ nurses to make house-to-house inspections of expectant mothers, to attend them during confinement, to take care of and protect the newborn infants and to give instructions relative thereto.

(*c*) Organize baby contests, give lectures upon matters pertaining to the care of expectant mothers, mothers and children, and distribute literature which contains advice and instructions relative to the protection of early infancy.

(*d*) Organize exhibitions and celebrations for the purpose of securing funds for the maintenance and operation of the institution.

The records of this office show twenty-five of these associations so organized, in the following towns: Antique—San Jose; La Union—San Fernando; Leyte—Tacloban; Mindoro—Calapan and Naujan; Occidental Negros—Bacolod, Saravia, Bago, Hinigaran, Valladolid, La Carlota, Isabela, Pontevedra and Cadiz; Rizal—Navotas and Malabon; Tarlac—Tarlac; Tayabas—Tayabas, Pitogo, Lucena, and Gasang; Bulacan—Bulacan; Capiz—Romblon; Nueva Ecija—Cabanatuan; Iloilo—Iloilo.

At present writing only four reports have been received from these associations relative to the work accomplished during 1917. One of these reports deals exclusively with the steps taken for the formation of the corporation as the actual work had not yet been begun in their clinic, no nurse having yet been secured; one states that a campaign has been undertaken as outlined in the articles of incorporation but no definite statistical figures could be given. The following are the combined figures from the remaining two reports:

Working days in the clinic	220
Children registered and treated in the clinic	343
Calls made by these children at the clinic	536
Children visited by the nurse	187
Visits made to these children	875
Mothers personally seen and instructed by the nurse	148
Visits made to these mothers by the nurse	270
Children classified by ages:	
Under 1 year	109
From 1 year to 2 years	202
Unclassified	32
Healthy children	126
Sick children	185
Children unclassified	32
Children nursed by their mothers	280

Children artificially fed	31
Children, feeding unclassified	32
Lectures given by the doctor	2
Subject:	
Care of expectant mothers, attendance	40
Care of newborn infants, attendance	50
Deaths classified by ages:	
Under 1 year	3
From 1 to 2 years	4
Unclassified	2
Causes of death:	
Under 1 year—	
Gastroenteritis	2
Bronchopneumonia	1
From 1 to 2 years—	
Dysentery	2
Gastroenteritis	1
Tubercular bronchitis	1
Unclassified	2

Insular aid as provided in Act No. 2633 was granted to the following institutions:

Las Amigas de la Infancia de Bacolod, Bacolod Occidental Negros	₱1,000.00
Centro de Puericultura de Calapan, Calapan, Mindoro	582.54
Centro de Puericultura de Navotas, Navotas, Rizal	1,573.55
Centro de Puericultura de Naujan, Naujan, Mindoro	564.50
Samahan ng Kababaihan (Inc.) Malabon, Rizal	2,916.22
Tarlac Women's Club, Tarlac, Tarlac	2,045.04

BABY CONTESTS.

One of the activities of the women's clubs and *centros de puericultura* and one of the means which this Office has devised to interest the general public in every town of the Islands in reducing the number of infant deaths and promoting the desire for better babies, is the baby contests. The records of this Office show that 17 baby contests were held during the year, in the following towns:

Baclayon, Bohol.
Imus, Cavite.
Malabon, Cavite.
Maragondon, Cavite.
Naic, Cavite.
Ternate, Cavite.
Ilagan, Isabela.
Majayjay, Laguna.
Bayombong, Nueva Vizcaya.
Bacolor, Pampanga.
Calasiao, Pangasinan.
Dagupan, Pangasinan.
Mangaldan, Pangasinan.
Paniqui, Pangasinan.
Tayabas, Tayabas.
Gerona, Tarlac.
Tarlac, Tarlac.

Hundreds of babies were entered in some of these contests, which were preceded by extensive campaigns.

GARDEN DAYS.

Provincial and municipal health officers were instructed to coöperate with the Bureau of Education officials as much as possible to make garden-day celebrations a success in each town, and to take advantage of the occasion to further the cause of sanitation and hygiene by means of suitable exhibits, featuring the products of home vegetable gardens, a model house, a model toilet, a model water system, and an efficient garbage disposal, also the proper method of cooking food and the importance of a well-balanced diet, as well as gota de leche features for the reduction of infant mortality; also in many cases conferences were given by the district health officers upon topics of sanitation and hygiene.

ESTABLISHMENT OF HOME VEGETABLE GARDENS.

The campaign for the establishment of home vegetable gardens in every home in the Philippine Islands was continued, following the same plan as last year, no opportunity for the accomplishment of this purpose being overlooked.

As a consequence of this campaign the applicants for seeds for the establishment of home gardens reached the figure of 33,778, distributed among the different provinces as follows:

Agusan	100	Laguna	761
Albay	1,417	La Union	660
Ambos Camarines and Calamianes	431	Leyte	1,157
Antique	497	Manila	1
Batanes	500	Mindanao and Sulu	274
Bohol	1,685	Mindoro	475
Bataan	298	Mountain Province	1,146
Capiz	153	Misamis	1,762
Cavite	536	Nueva Vizcaya	589
Cagayan	5,063	Occidental Negros	3,916
Cebu	257	Pangasinan	1,839
Ilocos Norte	1,000	Rizal	1,306
Isabela	4,000	Samar	667
Ilocos Sur and Abra	1,676	Sorsogon	155
		Tayabas	1,447

CAMPAIGN FOR THE ESTABLISHMENT OF THE ANTIPOLO SYSTEM OF TOILETS.

In every locality where they made their surveys the sanitary commissions reported that the majority of the population had no system of toilets whatever, except in Antipolo where a great number of the houses are provided with a pit system. This system is at least sufficiently satisfactory to be considered as complying with the minimum of sewage disposal efficiency which may be approved by this Service. During the year a more vigorous effort has been made to have a toilet of this kind established in every home in the Islands, unless some other system of disposal approved by this Service is installed. A model municipal ordinance was prepared and furnished to district health officers, provincial and municipal officials, and other persons interested in the matter. In order to teach the people how to construct this type of privy instructions in English, Spanish, and Tagalog were prepared and distributed.

At the end of the year 1916 there were 6,000 privies of the Antipolo type in use; at the end of the year 1917, 36,314, an increase of 30,314, and even better results of the campaign for their installation are looked for in future years.

DEVELOPMENT OF INDUSTRIES HAVING A BEARING UPON SANITATION AND HYGIENE.

As one of the obstacles which house owners find in installing the Antipolo system of toilets is the lack of a cheap material suitable for waste pipes, the Bureau of Science was requested to make a set of molds for manufacturing clay pipes which could be used as a pattern. This Bureau in addition to making the molds has also made a set of the clay pipes molded in the pattern. These pipes were taken to the kiln of Mr. Santiago Jimenez, of San Pedro Macati, for vitrification and to demonstrate the use of the molds. On account of the fact that the heat of the kiln in which the samples of clay pipes manufactured at the Bureau of Science were burned was not uniform and graduated to suit the maximum heat resistence of the clay the pipes melted in the process of burning. However pipes molded in the establishment with the clay used for making the tapayan were burned with satisfactory results.

An endeavor was made to establish this industry in the province of Bulacan. A demonstration as to the manner of molding these clay pipes was given in a pottery in Baliuag, by Messrs. Darjuan and Villanueva of the Bureau of Science, accompanied by the district health officer, as a result of which the factory of Mr. Pedro de la Merced, of Baliuag, is turning out for sale burned clay pipes of the unvitrified kind, which although not very good can be used in connection with the establishment of the Antipolo system of toilets.

At Baliuag a type of stove in imitation of the Japanese clay stoves is now manufactured in addition to the usual Filipino stoves. These new stoves are more sanitary but they find no general acceptance because charcoal must be used as fuel.

As a result of the Carnival exhibit mentioned in the beginning of the report of this Office, a factory for making cement shingles of the kind used in the sanitary model house has been established at Malabon. Its output, however, is very small, but it is hoped that as soon as the price of cement becomes lower, it will become active proportionately with the demand for the product.

REPORT OF THE PROPERTY OFFICE.

[B. D. BURMHAM, *Chief of Office.*]

During the year 365 general requisitions were received and filled, originating from the following stations:

Provincial requisitions	51
Health stations	93
Office of district nursing	31
Central office	16
Office of Sanitary Engineering	30
Disinfection squad	13
Office of Statistics	2
Provincial sanitary commission	19
Hospital ship "Busuanga"	15
San Lazaro Hospital	10
Government Orphanage, San Pedro Macati	9
Southern Islands Hospital	15
Culion Leper Colony	18
Cuyo Hospital	15
Baguio Hospital	10
Sibul Spring Sanatorium	7
Bontoc Hospital	4
Butuan Hospital	5
Bayombong Hospital	1
Albay Hospital	1
Total	365

Two hundred and forty requisitions were prepared and forwarded to the Bureau of Supply for delivery to the following stations:

For delivery to office of property	126
For delivery to San Lazaro Hospital	32
For delivery to Hospital ship "Busuanga"	2
For shipment to Butuan Hospital	3
For shipment to Bontoc Hospital	2
For shipment to Southern Islands Hospital	15
For shipment to Culion Leper Colony	26
For shipment to Baguio Hospital	11
For shipment to Cuyo Hospital	13
For shipment to provincial sanitary commission	10
Total	240

One hundred and forty-five requisitions were prepared and forwarded to the Bureau of Printing.

Orders for general supplies prepared under the direct order and payment system, 193.

Fifty commissary requisitions were received and filled, originating from the following stations:

Baguio Hospital	6
Bontoc Hospital	2
Culion Leper Colony	16
Cuyo Hospital	7
Government Orphanage, San Pedro Macati	1
San Lazaro Hospital	13
Southern Islands Hospital	5
Total	50

Commissary requisitions forwarded to the Bureau of Supply:

Baguio Hospital	4
Bontoc Hospital	1
Culion Leper Colony	27
Cuyo Hospital	3
Government Orphanage	1
San Lazaro Hospital	15
Southern Islands Hospital	8
Total	59

Miscellaneous orders prepared, 50.

Orders prepared for Culion merchandise account, 265.

Vaccine report.

	Units.
On hand January 1, 1917	3,350
Received during the year	1,261,310
Total to be accounted for	1,264,660
Issued during the year	1,253,410
Remaining on hand December 31, 1917	11,250
Requisitions for vaccine virus received and filled	1,552
Shipments made by boat	231
Shipment made by railroad	112
Total	343

Interbureau vouchers and bills received and passed by the office of property:

	Number.	Amount.
Bureau of Suply	625	₱187,982.56
Bureau of Prisons	17	2,156.36
Bureau of Printing	16	8,468.52
Bureau of Audits	1	650.00
Bureau of Customs	7	838.68
Bureau of Science	13	14,404.93
Bureau of Public Works	10	71.79
Bureau of Posts	7	1,758.00
Bureau of Coast and Geodetic Survey	2	2.00
Executive Bureau	1	1.50
Philippine General Hospital	1	2,000.00
City of Manila	2	16.28
Division of Cold Storage	12	3,840.62
Philippine School of Arts and Trades	8	180.80
Open Market	563	87,760.58
Total	1,285	310,132.62

REPORT OF THE OFFICE OF DISTRICT NURSING.

(Pearletta Clark, *Chief District Nurse.*)

The work of the district nursing office has continued along much the same lines as in the previous year. In Manila the four district nurses made house-to-house visits in the districts of Tondo, Binondo, San Lazaro, and in the tenements of the Walled City, where they treated any simple cases they found, but more especially giving instructions in the care and feeding of infants and small children, care of sick in the homes, precautions to be taken in infectious diseases, and how to purchase and prepare balanced diets.

It is pleasing to know that we are gradually gaining the confidence of the people. The daily visits of our nurses among them is becoming more appreciated, and an increasing number are asking advice and instruction, and following same.

To encourage the women of provincial towns meetings held for the purpose of organizing clubs were attended by the nurses, who were also sent to assist in baby contests held in Manila, Cavite, Bacolor, Alaminos, Dagupan, Obando, Candaba, Majayjay, and San Pablo.

At Obando the office of district nursing had charge of a booth of exhibits at the annual town fiesta.

A large number of circulars on health subjects were distributed by the nurses in Manila, in the towns where they worked in connection with the sanitary commissions, and through the women's clubs.

A demonstration on balanced diet was made at the model house during the carnival held in Manila in February, 1917.

Miss Dobbs, the dietitian, made a study of native foodstuffs and arranged balanced menus for a food bulletin being prepared by the Health Service.

The effort of this office has been to win the confidence of the people and by constant repetition to teach them health rules that may bring future results.

Tabular report of the work of district nurses for the year 1917.

	First visits.	Subsequent visits.	Treatments.	Sent to medical clinics.
Manila nurses	9,736	7,332	14,091	395
Sanitary commission nurses:				
Obando	715	68	1,804	----------
San Pablo	948	47	991	----------
Lubao	531	78	450	----------
Majayjay	343	----------	352	----------
Candaba	611	----------	574	----------
Total	12,884	7,525	18,262	395

Department of diatetics.

Demonstrations including preparation of babies' formulas and cooking of food	371
Formulas prepared	5,936
Food talks in Manila homes	1,903
Food talks in provincial homes	2,997

REPORT OF THE CLERICAL OFFICE.

(M. J. WALSH, *Chief Clerk.*)

The clerical office is composed of the office of the chief clerk, the record section and the financial section.

With a force of twenty employees in the office of the chief clerk and record section, over 127,000 pieces of mail matter were handled during the year or a daily average of over 420 pieces. This mail matter was handled in a very efficient manner, but few errors being made, and none of them of a serious nature.

Over 22,500 pieces of mail matter were received; 15,100 communications filed in the general files, and 70,000 letters and circulars and 20,200 reports and bulletins mailed.

The financial section with an increase of but one employee was called upon during the year to handle the accounts occasioned by the appropriation of ₱150,000 by Act No. 2671 which was turned over to the Philippine Health Service for disbursement, and the accounting transactions necessitated by the placing of the hospital ship in actual operation, in addition to its regular accounting work.

Due to the new order of the Governor-General authorizing slight increases to employees who have served satisfactorily for a period of one year provided there were funds appropriated to cover same, the were not so many changes in the clerical force as in previous years, a number of the lower salaried employees having received well-merited increases in salary.

On January 1, 1917, there were 25 employees in the clerical office; 6 employees were dropped and 8 employed during the year, leaving 27 employed on December 31, 1917.

A new rotary mimeograph and an addressograph were added to the office equipment during the year. These were necessary because of the inauguration of the Philippine Health Service daily bulletin on June 1, from which date up to December 15 two hundred copies of the bulletin were printed and mailed daily.

STATISTICAL TABLES.

PHILIPPINE HEALTH SERVICE.

JANUARY 1 TO DECEMBER 31, 1917.

GENERAL STATISTICS.

[Unless otherwise stated these statistics are for the fiscal year from January 1 to December 31, 1917.]

POPULATION OF THE CITY OF MANILA.

[Health Census of 1914.]

BY NATIONALITIES.

Nationality.	Population.		
	Male.	Female.	Total.
Americans	3,584	1,890	5,474
Filipinos	125,730	111,210	236,940
Spaniards	2,414	1,992	4,406
Other Europeans	1,027	479	1,506
Chinese	15,235	1,422	16,657
All others	1,407	553	1,960
Total	149,397	117,546	266,943

BY DISTRICTS.

Health districts.	Population.		
	Male.	Female.	Total.
No. 1, Intramuros	18,467	13,586	32,053
No. 2, Meisic	57,121	32,943	90,064
No. 4, Sampaloc	22,856	21,367	44,223
No. 5, Tondo	36,520	35,279	71,799
No. 6, Paco	14,433	14,371	28,804
Total	149,397	117,546	266,943

MARRIAGES.[1]

Nationality.	Total marriages.	Health district—					Single males married.			Widowed males married.		
		No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	Single female.	Widowed female.	Divorced female.	Single female.	Widowed female.	Divorced female.
Americans	65	25	23	4	4	9	51	8	1	3	2	----
Filipinos	2,168	178	906	277	702	105	1,822	114	----	125	106	----
Spaniards	2	1	----	----	1	----	2	----	----	----	----	----
Other Europeans	10	6	1	2	----	1	9	----	----	1	----	----
Chinese	35	5	22	2	6	----	26	1	----	7	1	----
All Others	5	----	5	----	----	----	3	----	----	2	----	----
Total	2,285	215	957	285	713	115	1,913	123	1	138	109	----

Nationality.	Divorced males married.			Nationality of brides.						Relationship.	
	Single female.	Widowed female.	Divorced female.	Americans.	Filipinos.	Spaniards.	Other Europeans.	Chinese.	All Others.	Blood.	Affinity.
Americans		----	----	14	47	----	3	----	1	----	----
Filipinos	1	----	----	----	2,163	2	----	3	----	3	----
Spaniards	----	----	----	----	2	----	----	----	----	----	----
Other Europeans	----	----	----	----	5	----	5	----	----	----	----
Chinese	----	----	----	----	28	----	----	6	1	----	----
All Others	----	----	----	----	4	----	----	----	1	----	----
Total	1	----	----	14	2,349	2	8	9	3	3	----

Average per thousand population, 17.11.

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[1] Registration incomplete.

MARRIAGES, BY AGE.[1]

Males.		Females.						
Age.	Number.	To 14 years.	To 20 years.	To 25 years.	To 30 years.	To 40 years.	To 50 years.	Over 50 years.
To 14 years								
To 20 years	620	5	535	64	13	3		
To 25 years	999	7	657	265	58	10	2	
To 30 years	345	2	167	87	57	30	1	1
To 40 years	203	1	64	49	37	42	9	1
To 50 years	79		11	13	11	36	7	1
Over 50 years	39		2	4	2	17	11	3
Total	2,285	15	1,436	482	178	138	30	6

[1] Registration incomplete.

BIRTHS REPORTED.[1]

Nationality.	Male.	Annual birth rate per 1,000.	Female.	Annual birth rate per 1,000.	Total.	Annual birth rate per 1,000.
Americans	86	23.99	79	41.79	165	30.14
Filipinos	4,385	34.87	3,965	35.65	8,350	35.24
Spaniards	20	8.28	36	18.07	56	12.70
Other Europeans	32	31.15	29	60.54	61	40.50
Chinese	122	8.00	101	71.02	223	13.38
All Others	13	9.23	15	27.12	28	14.28
Total and average	4,658	31.17	4,225	35.94	8,883	33.27

[1] Registration incomplete.

BIRTHS, BY DISTRICTS.[1]

Nealth Districts—	Legitimates.			Illegitimates.			Grand total.	Annual. birth rate per 1,000.
	Male.	Female.	Total.	Male.	Female.	Total.		
No. 1 Intramuros	871	769	1,640	67	61	128	1,768	55.15
No. 2 Meisic	851	769	1,620	43	43	86	1,706	18.94
No. 4 Sampaloc	788	701	1,489	63	48	111	1,600	36.18
No. 5 Tondo	1,285	1,174	2,459	88	68	156	2,615	36.43
No. 6 Paco	587	567	1,154	15	25	40	1,194	41.45
Total	4,382	3,980	8,362	276	245	521	8,883	33.27

	Living.	Still-births.
Births attended by—		
Physicians	2,702	168
Midwife	1,429	24
Family	4,752	167

[1] Registration incomplete.

BIRTHS, ACCORDING TO NUMBER OF CHILDREN BORNE BY MOTHER.

Number of births in the order in which the child was born, whether first child, second child, etc.	Living.			Stillborn.			Grand total.
	Male.	Female.	Total.	Male.	Female.	Total.	
First	1,026	893	1,919	41	37	78	1,997
Second	800	716	1,516	26	18	44	1,560
Third	692	652	1,344	19	11	30	1,374
Fourth	589	516	1,105	36	6	42	1,147
Fifth	418	394	812	19	18	37	849
Sixth	320	324	644	15	9	24	668
Seventh	247	231	478	15	9	24	502
Eighth	181	175	356	11	7	18	374
Ninth	133	110	243	11	6	17	260
Tenth	105	71	176	7	9	16	192
Eleventh	52	53	105	5	2	7	112
Twelfth	41	38	79	7	3	10	89
Thirteenth	24	23	47	1	2	3	50
Fourteenth	17	10	27	2	1	3	30
Fifteenth	6	7	13	4		4	17
Sixteenth	4	5	9				9
Seventeenth	3	1	4	1		1	5
Eighteenth		3	3	1		1	4
Nineteenth		2	2				2
Twentieth							
Twenty-first		1	1				1
Total	4,658	4,225	8,883	221	138	359	9,242

NUMBER OF DEATHS AND DEATH RATE PER 1,000 AMONG RESIDENTS, BY NATIONALITIES.

Nationality.	Male.	Annual death rate per 1,000.	Female.	Annual death rate per 1,000.	Total.	Annual death rate per 1,000.
Americans	27	7.53	12	6.34	39	7.12
Filipinos	3,313	26.35	3,007	27.03	6,320	26.67
Spaniards	33	13.67	13	6.52	46	10.44
Other Europeans	9	8.76	6	12.52	15	9.96
Chinese	228	14.96	17	11.95	245	14.70
All Others	12	8.52	5	9.04	17	8.67
Total and average	3,622	24.24	3,060	26.03	6,682	25.03

A CLASSIFIED REPORT OF ALL DEATHS OCCURRING IN MANILA, INCLUDING TRANSIENTS.

Social condition.	Number.	
	Male.	Female.
Married	1,162	739
Divorced		
Widowed	307	552
Single	600	196
Children	2,300	1,990
Condition not stated	51	14
Total	4,420	3,491
Grand total	7,911	

Stillbirths	**378**
Number of deaths with medical attendance	**4,448**
Number of deaths without medical attendance	**3,463**

DEATHS, BY AGES.

Ages.	Residents.		Transients.		Total.
	Male.	Female.	Male.	Female.	
Under 30 days	416	328	33	17	794
30 days to under 1 year	703	598	183	169	1,653
1 year to under 2 years	358	348	28	22	756
2 years to 4 years	347	309	33	25	714
5 years to 9 years	124	114	8	9	255
10 years to 14 years	54	46	13	5	118
15 years to 19 years	117	75	33	7	232
20 years to 29 years	282	233	126	52	693
30 years to 39 years	268	232	128	45	673
40 years to 49 years	284	181	89	35	589
50 years to 59 years	218	146	68	22	454
60 years to 69 years	200	127	35	15	377
70 years to 79 years	131	137	15	2	285
80 years to 89 years	79	101	3	3	186
90 years to 99 years	31	76	1	1	109
100 years and over	5	8		2	15
Age not stated	5	1	1		7
Total	3,622	3,060	797	431	[a] 7,910

[a] One male, nationality and permanent residence unknown, not included.

DEATHS AND DEATH RATE PER 1,000, BY DISTRICTS, INCLUDING TRANSIENTS.

Health districts—	Deaths.	Annual death rate per 1,000.
No. 1, Intramuros	1,314	39.85
No. 2, Meisic	1,512	16.31
No. 4, Sampaloc	1,048	23.34
No. 5, Tondo	3,384	46.46
No. 6, Paco	653	22.42
Total	7,911	29.03

NUMBER OF DEATHS, WITH CAUSES, OCCURRING AMONG RESIDENTS AND TRANSIENTS IN THE CITY OF MANILA (STILLBIRTHS NOT INCLUDED).

Causes of death.	Americans.				Filipinos.				Spaniards.				Other Europeans.				Chinese.				All others.				Total.				Grand total.
	Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
I. General Diseases.																													
1. Typhoid fever		1			101	75	23	9									1				1		5		103	76	28	9	216
4. Malaria			1		27	15	8	6	1								5		5				1		33	15	15	6	69
4a. Malarial cachexia					1	4	3	1																	1	4	3	1	9
5. Smallpox					1	1																			1	1			2
6. Measles					1	1																			1	1			2
7. Scarlet fever						1																				1			1
8. Whooping cough					3	5																			3	5			8
9. Diphtheria and croup					16	11	5	3																	16	11	5	3	35
10. Influenza					4	8	2			1															4	9	2		15
12. Asiatic cholera					3	5																			3	5			8
14. Dysentery	1	2	4		148	116	18	11	1		2		1	2			2		1		1		2		154	120	27	11	312
17. Leprosy					2	1	5	1																	2	1	5	1	9
18. Erysipelas					5	6		3																	5	6		3	14
19. Other epidemic diseases					1		1																		1		1		2
20. Purulent infection and septichæmia	1		1		10	8	6	5	2				1				1		2						15	8	9	5	37
21. Glanders						1																				1			1
23. Rabies					1		1	1																	1		1	1	3
24. Tetanus	1				73	52	8	1	1		1						2								77	52	9	1	139
27. Beriberi	1				203	185	48	37									12	1	1			1	1		216	187	50	37	490
28. Tuberculosis of the lungs	1		1		656	526	143	40	3	1	1						59		9		3	1	4		722	528	158	40	1,448
29. Acute miliary tuberculosis					1	3	1	1																	1	3	1	1	6
30. Tuberculous meningitis					34	35	4	2																	34	35	4	2	75
31. Abdominal tuberculosis					20	39	10	3									1								21	39	10	3	73
32. Pott's disease					1	1	1										1								2	1	1		4
33. White swellings						1		1									1								1	1		1	3
34. Tuberculosis of other organs					5	1	1	1									1				1				7	1	1	1	10
35. Disseminated tuberculosis					8	3	4	1											1		1				9	3	5	1	18
36. Rickets					1	2		1																	1	2		1	4
37. Syphilis	1				3		2	1	1																5		2	1	8
39. Cancer and other malignant tumors of the buccal cavity					1	5	1	1	1																2	5	1	1	9
40. Cancer and other malignant tumors of the stomach, liver					5	12	5	2			1								1						5	12	7	2	26

Number of deaths, with causes, ocurring among residents and transients in the city of Manila (stillbirths not included)—Continued.

Causes of death.	Americans.				Filipinos.				Spaniards.				Other Europeans.				Chinese.				All others.				Total.				Grand total.
	Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
I. General diseases—Continued.																													
41. Cancer and other malignant tumors of the peritonæum, intestines, rectum					1	1	1	1																	1	1	1	1	4
42. Cancer and other malignant tumors of the female genital organs						14		4																		14		4	18
43. Cancer and other malignant tumors of the breast						8			1																1	8			9
44. Cancer and other malignant tumors of the skin					2			1																	2			1	3
45. Cancer and other malignant tumors of other organs and of organs not specified	1				15	9	6	5	2								2								20	9	6	5	40
46. Other tumors (tumors of the female genital organs excepted)						2		1																		2		1	3
47. Acute articular rheumatism					2	1																			2	1			3
48. Chronic rheumatism and gout					5	3																			5	3			8
49. Scurvy					4	1		1																	4	1		1	6
50. Diabetes					3	3	1	2	1		1						1								5	3	2	2	12
51. Exophthalmic goitre						2																				2			2
53. Leuchæmia							1																				1		1
54. Anæmia, chlorosis					1	1		1																	1	1		1	3
55. Other general diseases					5	3	3														1				6	3	3		12
56. Alcoholism (acute or chronic)								1																				1	1
59. Other chronic poisonings																	2								2				2
II. Diseases of the Nervous System and of the Organs of special Sense.																													
60. Encephalitis					1												1								2				2
61. Simple meningitis	3			1	118	127	15	16		1							2	2					3		123	130	18	17	288
63. Other diseases of the spinal cord					5	1																			5	1			6
64. Cerebral hæmorrhage, apoplexy	2				44	44	5	2	2	1							12		2						60	45	7	2	114
65. Softening of the brain					1	4											5								6	4			10
66. Paralysis without specified cause					9	10	2																		9	10	2		21
67. General paralysis of the insane						1																				1			1

68. Other forms of mental alienation	1				8	6	43	8	1		1				1		2		1		1				13	6	46	8	73
69. Epilepsy						1	2																			1	2		3
70. Convulsions (nonpuerperal) (5 years and over)						1																				1			1
71. Convulsions of infants (under 5 years of age)	1				114	85	17	14		1							1	4				1	1		116	91	18	14	239
73. Hysteria																					1				1				1
74. Other diseases of the nervous system					1		2	1	1																2		2	1	5
III. Diseases of the Circulatory System.																													
77. Pericarditis						2	1																			2	1		3
78. Acute endocarditis					4	6	5	2			1						3								7	6	6	2	21
79. Organic diseases of the heart	2	2			59	28	11	18	2		1		1				25	1	4				2	1	89	31	18	19	157
80. Angina pectoris					21	5	1																		21	5	1		27
81. Diseases of the arteries, atheroma, aneurysm, etc.	1				7	6	1		2	1							22								32	7	1		40
82. Embolism and thrombosis						1	1	1																		1	1	1	3
84. Diseases of the lymphatic system (lymphangitis, etc.)						1																				1			1
85. Hæmorrhage; other diseases of the circulatory system						1																				1			1
IV. Diseases of the Respiratory System.																													
87. Diseases of the larynx					1	1																			1	1			2
88. Diseases of the thyreoid body							1																				1		1
89. Acute bronchitis					247	220	54	58		1								1							247	222	54	58	581
90. Chron c bronchitis					90	80	9	9	1								10		4						101	80	13	9	203
91. Broncho-pneumonia	1				144	138	11	16	1					1			2	2							148	141	11	16	316
92. Pneumonia	1	1			24	21	13	5					1				2	1	1						28	23	14	5	70
93. Pleurisy					6	5	3	2	1																7	5	3	2	17
94. Pulmonary congestion, pulmonary apoplexy					5	4		1																	5	4		1	10
95. Gangrene of the lungs					1																				1				1
96. Asthma					12	12																			12	12			24
97. Pulmonary emphysema					1																				1				1
98. Other diseases of the respiratory system (tuberculosis excepted)					1	2																			1	2			3
V. Diseases of the Digestive System.																													
99. Diseases of the mouth and annexa		1			2				1	1															3	2			5
100. Diseases of the pharynx					1	1	1																		1	1	1		3
101. Diseases of the œsophagus							1																				1		1
102. Ulcer of the stomach					9	3	4		1								1								11	3	4		18
103. Other diseases of the stomach (cancer exepted)					5	6	3										1								6	6	3		15
104. Diarrhœa and enteritis (under 2 years)	3			1	182	157	28	22	1						1		2	3				1			188	161	29	23	401
105. Diarrhœa and enteritis (2 years and over)		1	1		97	71	6	3		1							1								98	73	7	3	181
106. Ankylostomiasis					1		1																		1		1		2
107. Intestinal parasites			1		7	6	1																		7	6	2		15
108. Appendicitis and typhlitis					4	3	1			1	1						1		1						5	4	3		12
109. Hernia, intestinal obstructions					12	3	9	5											1						12	3	10	5	30
110. Other diseases of the intestines					10	5	3																		10	5	3		18
111. Acute yellow atrophy of the liver					9	1											1								10	1			11

Number of deaths, with causes, ocurring among residents and transients in the city of Manila (stillbirth not included)—Continued.

Causes of death.	Americans.				Filipinos.				Spaniards.				Other Europeans.				Chinese.				All others.				Total.				Grand total.
	Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
V. Diseases of the Digestive System—Continued.																													
113. Cirrhosis of the liver					6	4	2	2	1	1	1		2				6								15	5	3	2	25
114. Biliary calculi						2	2										1								1	2	2		5
115. Other diseases of the liver			1		11	2	1	1					1				1								13	2	2	1	18
116. Diseases of the spleen					1																				1				1
117. Simple peritonitis (nonpuerperal)					12	14	7	2									1								13	14	7	2	36
118. Other diseases of the digestive system (cancer and tuberculosis excepted)					1	1	3																		1	1	3		5
VI. Nonvenereal Diseases of the Genito-urinary System and Annexa.																													
119. Acute nephritis					38	34	7	6									1								39	34	7	6	86
120. Bright's disease	1		2		85	111	24	13	3		3		1			1	13				1				104	111	29	14	258
122. Other diseases of the kidneys and annexa					4	3	1	2																	4	3	1	2	10
123. Calculy of the urinary passages					6	1	2																		6	1	2		9
124. Diseases of the bladder					2	1	8																		2	1	3		6
126. Diseases of the prostate							1																				1		1
128. Uterine hæmorrhage (nonpuerperal)						2																				2			2
129. Uterine tumor (noncancerous)						1		2																		1		2	3
130. Other diseases of the uterus						2																				2			2
131. Cysts and other tumors of the ovary						3																				3			3
132. Salpingitis and other diseases of the female genital organs						1		1																		1		1	2
VII. The Puerperal State.																													
134. Accidents of pregnancy						5		2																		5		2	7
135. Puerperal hæmorrhage						13		6						2												15		6	21
136. Other accidents of labor						3		1																		3		1	4
137. Puerperal septichæmia						29		7																		29		7	36
138. Puerperal albuminuria and convulsions				1		8		3														1		1		9		5	14

VIII. Diseases of the Skin and of the Cellular Tissue.																													
142. Gangrene					5	1	4	1																	5	1	4	1	11
144. Acute abscess					4	1	2																		4	1	2		7
145. Other diseases of the skin and annexa					1																				1				1
IX. Disease of the bones and of the Organs of Locomotion.																													
146. Diseases of the bones (tuberculosis excepted)					1		1	1									1								2		1	1	4
X. Malformations.																													
150. Congenital malformations (stillbirth not included):																													
(1) Hydrocephalus							1																				1		1
(2) Congenital malformations of the heart		1			6	2	1																		6	3	1		10
(3) Other congenital malformations		1			2	1																			2	2			4
XI. Diseases of Early Infancy.																													
151. Congenital debility icterus, and sclerema			2	1	48	50	20	13																	48	50	22	14	134
(1) Premature birth (not stillborn)	1				12	4	1							1											13	5	1		19
(2) Congenital debility		2		1	234	207	17	15									4	2							238	211	17	16	482
152. Other diseases peculiar to early infancy					1																				1				1
(1) Injuries at birth (not stillborn)					4					1															4	1			5
(2) Other causes peculiar to early infancy					13	10	2																		13	10	2		25
XII. Old Age.																													
154. Senility					121	217	2	4		1															121	218	2	4	345
XIII. Affection Caused by External Causes.																													
155. Suicide by poison							1																				1		1
157. Suicide by hanging or strangulation					2												4								6				6
158. Suicide by drowning	1																								1				1
160. Suicide by cutting or piercing instruments							2										1								1		2		3
165^b. Other acute poisonings																	2								2				2
167. Burns (conflagration excepted)					3	2	5	1																	3	2	5	1	11
168. Absorption of deleterious gases (conflagration excepted)								1																				1	1
169. Accidental drowning	1				9	6											2		1		1				13	6	1		20
170. Traumatism by firearms					2																				2				2
171. Traumatism by cutting or piercing instruments					1		4																		1		4		5
172. Traumatism by fall				1	4	2	5	1											1						4	2	6	2	14
174. Traumatism by machines							1																				1		1
175. Traumatism by other crushing (vehicles, railways, landslides, etc.)					9			1									1								10			1	11

Number of deaths, with causes, ocurring among residents and transients in the city of Manila (stillbirth not included)—Continued.

Causes of death.	Americans.				Filipinos.				Spaniards.				Other Europeans.				Chinese.				All others.				Total.				Grand total.
	Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		Residents.		Transients.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
XIII. Affection Caused by External Causes—Cont.																													
176. Injuries by animals						1	1																			1	1		2
181. Electricity (lightning excepted)							1																				1		1
182. Homicide by firearms	1																								1				1
183. Homicide by cutting or piercing instruments					3	2	1	1																1	3	2	1	2	8
185. Fractures (cause not specified)					7		5																		7		5		12
186. Other external violence			1		4	1	3	1									2						1		6	1	5	1	13
XIV. Ill-defined Diseases.																													
187. Ill-defined organic disease					1	1																			1	1			2
189. Cause of death not specifined or ill-defined					14	19	9	1	1				1				3						1		19	19	10	1	49
Total	27	12	15	6	3,313	3,007	709	421	33	13	14		9	6	2	1	228	17	36		12	5	21	3	3,622	3,060	797	431	7,910
Grand total	39		21		6,320		1,130		46		14		15		3		245		36		17		24		6,682		1,228		7,910

NUMBER OF DEATHS BY NATIONALITY, SEX, AND AGE.

Causes of death.	Under 30 days.												30 days to under 1 year.												1 year to under 2 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
I. General diseases.																																				
1. Typhoid fever																											2	1								
4. Malaria																											1	1								
5. Smallpox																1											1									
6. Measles																												1								
7. Scarlet fever				1																																
8. Whooping cough																3											1									
9. Diphtheria and croup															1	1											10	7								
10. Influenza															2	3											2	1								
14. Dysentery													1		15	11									2	1	36	30								
18. Erysipelas			2	3											1	4											1									
20. Purulent infection and septichæmia															2	2												2								
24. Tetanus			61	41												1																				
27. Beriberi			16	23									1		194	148					1			1			11	5								
28. Tuberculosis of the lungs															5	4											8	5								
29. Acute miliary tuberculosis																1												1								
30. Tuberculous meningitis															2	4											9	5								
31. Abdominal tuberculosis																											2	2								
32. Pott's disease																					1															
33. White swellings																												1								
34. Tuberculosis of other organs																											1									
36. Rickets																1												1								
37. Syphilis															2	1	1																			
45. Cancer and other malignant tumors of other organs and of organs not specified															1																					
49. Scurvy															3	1											1									
55. Other general diseases			2	1											2												1									
II. Diseases of the nervous system and of the organs of special sense.																																				
61. Simple meningitis			3	2								1	1		43	52		1			1		1		1		39	44					1	2	1	
63. Other diseases of the spinal cord																											1									
64. Cerebral hæmorrhage, apoplexy															1																					

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	Under 30 days.												30 days to under 1 year.												1 year to under 2 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Famale.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
I. General diseases—Continued.																																				
71. Convulsions of infants (under 5 years of age)			54	26								1	1		64	61		1			1	3	1				7	7						1		
III. Diseases of the circulatory system.																																				
78. Acute endocarditis																1																				
79. Organic diseases of the heart			1	1											3	1											1									1
IV. Diseases of the respiratory system.																																				
87. Disease of the larynx																											1									
89. Acute bronchitis			7	7											221	178						1					48	62								
90. Chronic bronchitis				1											34	36											24	21								
91. Broncho-pneumonia			1												49	47				1	1						51	55								
92. Pneumonia				1												1												1								
93. Pleurisy															4	1											2	1								
94. Pulmonary congestion, pulmonary apoplexy				2											2																					
96. Asthma																																				
97. Pulmonary emphysema															1																					
V. Diseases of the digestive system.																																				
103. Other diseases of the stomach (cancer excepted)				1																																
104. Diarrhœa and enteritis (under 2 years)	1		6	4						1			1		116	96	1				2	1		1	1	1	88	79			1			1		
107. Intestinal parasites																											3	2								
109. Hernias, intestinal obstruction			2	1											1	2											1									
110. Other diseases of the intestines			1												1	1											4	3								
111. Acute yellow atrophy of the liver															1																					
115. Other diseases of the liver															1																					
117. Simple peritonitis (nonpuerperal)				1											2													1								
118. Other diseases of the digestive system (cancer and tuberculosis excepted)																											1									

VI. Nonvenereal diseases of the genito-urinary system and annexa.																																				
119. Acute nephritis															8	5											11	5								
120. Bright's disease															7	4									1		6	10								
122. Other diseases of the kidneys and annexa																												1								
123. Calculi of the urinary passages				1																																
VIII. Diseases of the skin and of the cellular tissue.																																				
144. Acute abscess															2													1								
145. Other diseases of tde skin and annexa															1																					
X. Malformations.																																				
150. Congenital malformations (stillbirths not included):																																				
(1) Hydrocephalus			1																																	
(2) Congenital malformations of the heart			5	2										1	1												1									
(3) Other congenital malformations		1	2	1																																
XI. Diseases of early infancy.																																				
151. Congenital debility, icterus and sclerema	2	1	16	5											50	56											1	2								
(1) Premature birth (not stillborn)	1		13	4				1																												
(2) Congenital debility		3	227	195					4	2					24	27																				
152. Other diseases peculiar to early infancy			1																																	
(1) Injuries at birth (not stillborn)			4			1																														
(2) Other causes peculiar to early infancy			14	10											1																					
XIII. Affections caused by external causes.																																				
172. Traumatism by fall																1												1								
XIV. Ill-defined diseases.																																				
189. Cause of death not specified or ill-defined			1												2												1	4								
Total	4	5	440	334		1		1	4	3	1	1	5	1	870	756	2	2		1	7	5	2	2	5	2	378	363			1		1	4	1	1
Grand total	9		774		1		1		7		2		6		1,626		4		1		12		4		7		741				1		5		2	

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	2 years to 4 years.												5 years to 9 years.												10 years to 14 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
I. General diseases.																																				
1. Typhoid fever			4	7											8	5					1						12	13								
4. Malaria				4											3	1												2					1			
4a. Malaria cachexia															1																					
8. Whooping cough			1	2											1																					
9. Diphtheria and croup			10	6																																
10. Influenza				1											1																					
12. Asiatic chorlera			1													1																				
14. Dysentery		1	56	42			1	1							31	20											10	3								
18. Erysipelas																1																				
20. Purulent infection and septichæmia	1		2	1											1	1																				
23. Rabies																1																				
24. Tetanus			1												2	4									1		4	1	1							
27. Beriberi			5	6											2	4											2	3								
28. Tuberculosis of the lungs			17	18											9	9											10	3								
30. Tuberculosis meningitis			18	19											2	4											1	2								
31. Abdominal tuberculosis			3	3											2	2											1									
32. Pott's disease				1																																
33. White swellings																1																				
34. Tuberculosis of other organs			2	1											1																					
35. Disseminated tuberculosis															2	1											1									
36. Rickets			1	1																																
48. Chronic rheumatism and gout															1																					
49. Scury				1																																
50. Diabetes				1																								1								
54. Anæmia, chlorosis																											1									

II. Diseases of the nervous system and of the organs of special sense.																																				
60. Encephalitis			1																														1			
61. Simple meningitis			32	31									1		10	11												1								
64. Cerebral hæmorrhage, apoplexy			2	2											1	1												1								
70. Convulsions (nonpuerperal) (5 years and over)																1																				
71. Convulsions of infants (under 5 years of age)			6	5																																
74. Other diseases of the nervous system			1																																	
III. Diseases of the circulatory system.																																				
77. Pericarditis																1																				
78. Acute endocarditis			1	1												1																				
79. Organic diseases of the heart			1												3											1	1	1								
81. Diseases of the arteries, atheroma, aneurysm, etc																											1									
IV. Diseases of the respiratory system.																																				
87. Disease of the larynx				1																																
89. Acute bronchitis			20	28											3	2											1	1								
90. Chronic bronchitis			22	16											5	4												1								
91. Bronchopneumonia	1		31	39					1	1					7	4						1					1	1								
92. Pneumonia			2	2									1		3	2											1	3								
93. Pleurisy			1	3																																
94. Pulmonary congestion, pulmonary apoplexy				1											1												1	1								
96. Asthma			1	1																																
98. Other diseases of the respiratory system (tuberculosis excepted)																1																				
V. Diseases of the digestive system.																																				
99. Other diseases of the mouth and annexa			1											1																						
100. Diseases of the pharynx																1																				
103. Other diseases of the stomach (cancer excepted)			1													1																				
105. Diarrhœa and enteritis (2 years and over)	1	1	75	53											8	10											2	1								
107. Intestinal parasites	1		5	2												1																				
108. Appendicitis and typhlitis																														1						
109. Hernias, intestinal obstruction			1																									1								
110. Other diseases of the intestines			1	1											1												2									

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	2 years to 4 years.												5 years to 9 years.												10 years to 14 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos-		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
V. Diseases of the digestive system—Ctd.																																				
111. Acute yellow atrophy of the liver															1																					
117. Simple peritonitis (nonpuerperal)			3													1												1								
VI. Nonvenereal diseases of the genito-urinary system and annexa.																																				
119. Acute nephritis			10	13											4	5											1	2								
120. Bright's disease			20	9											6	12											1	5								
122. Other diseases of the kidneys and annexa				1																																
123. Calculi of the urinary passages																											1									
124. Diseases of the bladder																1																				
VIII. Diseases of the skin and of the cellular tissue.																																				
142. Gangrene			3												3													1								
IX. Diseases of the bones and of the organs of locomotion.																																				
146. Diseases of the bones (tuberculosis excepted)																1																				
XI. Diseases of early infancy.																																				
151. Congenital debility, icterus and sclerema			1																																	
XIII. Affections caused by external causes.																																				
157. Suicide by hanging or strangulation																											1									
167. Burns (conflagration excepted)			4													1																				

168. Absorption of deleterious gases (conflagration excepted)																1																				
169. Accidental drowning				3											1	2											4						1			
170. Traumatism by firearms															1																					
172. Traumatism by fall																											1									
175. Traumatism by other crushing (vehicles, railways, landslides, etc.)			2												1																					
186. Other external violence			1	1																																
XIV. Ill-defined diseases.																																				
187. Ill-defined organic diseases				1																																
189. Cause of death not specified or ill-defined			4	2												3	1										1									
Total	4	2	374	330			1	1	1	1			2	1	129	121					1	1			1	1	62	49	1	1			3			
Grand Total	6		704				2		2				3		250						2				2		111		2				3			

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	15 years to 19 years.												20 years to 29 years.												30 years to 39 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
I. General diseases.																																				
1. Typhoid fever			17	19											53	22							5		1		12	9							1	
4. Malaria			5	1					2						5	6					3		1				10						1			
4a. Malaria cachexia															1	1											2	1								
6. Measles															1																					
10. Influenza				2											1															1						
12. Asiatic cholera															1	1											1	2								
14. Dysentery			1	1											4	7							2	1			1	1	1						1	
17. Leprosy															1												2	1								
18. Erysipelas																											1									
20. Purulent infection and septichæmia			2	1											2	1					1			1			3	2			1					
23. Rabies																											1									
24. Tetanus			2												1	1											1	2	1				1			
27. Beriberi			1	2					2						6	11					1	1	1		1		4	8					1			
28. Tuberculosis of the lungs			57	24	1				1						192	136	2				5		4				175	125					12		2	
29. Acute miliary tuberculosis				1												1											1									
30. Tuberculous meningitis			2												3	1												1								
31. Abdominal tuberculosis			1												3	2											5	14					1			
32. Pott's disease			1																								1									
34. Tuberculosis of other organs															1								1													
35. Disseminated tuberculosis															2						1						3	2								
37. Syphilis																											1									
39. Cancer and other malignant tumors of the buccal cavity			1																																	
40. Cancer and other malignant tumors of the stomach, liver																1											3	3								
41. Cancer and other malignant tumors of the peritonæum, intestines, rectum																											2	1								
42. Cancer and other malignant tumors of the female genital organs				1												2												4								
43. Cancer and other malignant tumors of the breast																												1								

45. Cancer and other malignant tumors of other organs and of organs not specified																											2	3								
46. Other tumors (tumors of the female genital organs excepted)																												2								
48. Chronic rheumatism and gout																												1								
50. Diabetes																1											1									
51. Exopthalmic goitre																												1								
53. Leuchæmia															1																					
55. Other general diseases				2											2																				1	
59. Other chronic poisonings																																	1			
II. Diseases of the nervous system and of the organs of special sense.																																				
61. Simple meningitis			2											1	1												1									
63. Other diseases of the spinal cord															1												2	1								
64. Cerebral hæmorrhage, apoplexy				1											2	1					1						2	5					1			
65. Softening of the brain																												1								
66. Paralysis without specified cause				1											1																					
68. Other forms of mental alienation			2												10	2											23	9	1						1	
69. Epilepsy															1												1	1								
73. Hysteria																							1													
74. Other diseases of the nervous system															2																					
III. Diseases of the circulatory system.																																				
77. Pericarditis																											1									
78. Acute endocarditis			1	2					2						2	1					1						2	1								
79. Organic diseases of the hearth			6						2						8	9					1						8	11			1		5			
80. Angina pectoris			2												1												3									
81. Diseases of the arteries, atheroma, aneurysm, etc																																	1			
82. Embolism and thrombosis																											1	1								
84. Diseases of the lymphatic system (lymphangitis, etc.)																												1								
85. Hæmorrhage; other diseases of the circulatory system																1																				
IV. Diseases of the respiratory system.																																				
88. Diseases of the thyreoid body															1																					
90. Chronic bronchitis																											1									
91. Bronchopneumonia															3												3	1								
92. Pneumonia			3	3											15	3										1	2	2					1	1		
93. Pleurisy															1	1											1									
94. Pulmonary congestion, pulmonary apoplexy																											1	1								
96. Asthma																1											2	1								
98. Other diseases of the respiratory system (tuberculosis excepted)				1																																

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	15 years to 19 years.												20 years to 29 years.												30 years to 39 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
V. *Diseases of the digestive system.*																																				
99. Other diseases of the mouth and annexa																														1						
100. Diseases of the pharynx																											1									
101. Diseases ot the œsophagus																											1									
102. Ulcer of the stomach			1																								3									
103. Other diseases of the stomach (cancer excepted)																1																	1			
105. Diarrhœa and enteritis (2 years and over)			4	1											2	1											3	1								
108. Appendicitis and typhlitis				1												2					1						2						1			
109. Hernias, intestinal obstructions			2												4	2											6									
110. Other diseases of the intestines			1																								1									
111. Acute yellow atrophy of the liver															1												2						1			
113. Cirhosis of the liver			1												1	1											2				1		1			
114. Biliary calculi															1	1											1						1			
115. Other diseases of the liver				1											1	1																				
116. Diseases of the spleen			1																																	
117. Simple peritonitis (nonpuerperal)			1	2											2	3											2	3								
118. Other diseases of the digestive system (cancer and tuberculosis excepted)																											1									
VI. *Nonvenereal diseases of the genito-urinary system and annexa.*																																				
119. Acute nephritis			1												2	4											1	2								
120. Bright's disease			4	4					1						7	11											9	7					4		1	
122. Other diseases of the kidneys and annexa															2	1												1								
123. Calculi of the urinary passages															2												1									
124. Diseases of the bladder																											1									
129. Uterine tumor (noncancerous)																1												1								
130. Other diseases of the uterus				2																																
131. Cysts and other tumors of the ovary																												1								
132. Salpingitis and other diseases of the female genital organs				1																																

VII. The puerperal state.																																				
134. Accidents of pregnancy																4												3								
135. Puerperal hæmorrhage				1												4												11				2				
136. Other accidents of labor				1												2																				
137. Puerperal septichæmia				2												20												11								
138. Puerperal albuminuria and convulsions				2								1		1		4												4								1
VIII. Diseases of the skin and of the cellular tissue.																																				
142. Gangrene																											1									
144. Acute abscess																											1									
IX. Diseases of the bones and of the organs of locomotion.																																				
146. Diseases of the bones (tuberculosis excepted)			1																																	
XIII. Affections caused by external causes.																																				
155. Suicide by poison																											1									
157. Suicide by hanging or strangulation																					1						1						1			
160. Suicide by cutting or piercing instruments															1																		1			
165b. Other acute poisonings									1																								1			
167. Burns (conflagration excepted)															3													1								
169. Accidental drowning									1						1										1			1							1	
170. Tranmatism by firearms															1																					
171. Traumatism by cutting or piercing instruments			1												3																					
172. Traumatism by fall			1												3	1										1	2									
175. Traumatism by other crushing (vehicles, railways, landslides, etc.)			2						1							1											1									
176. Injuries by animals			1	1																																
181. Electricity (lightning excepted)			1																																	
183. Homicide by cutting or piercing instruments			1												2	1								1			1	1								
185. Fractures (cause not specified)			3												3												2									
186. Other external violence			1												1												4						1		1	
XIV. Ill-defined diseases.																																				
187. Ill-defined organic diseases																											1									
189. Cause of death not specified or ill-defined									2						3	1											2									
Total			134	81	1				15			1		2	375	280	2				16	1	15	2	3	3	340	268	3	2	3	2	38	1	9	1
Grand total			215		1				15		1		2		655		2				17		17		6		608		5		5		39		10	

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	40 years to 49 years.												50 years to 59 years.												60 years to 69 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
I. General diseases.																																				
1. Typhoid fever			10	6											2												4	1								
4. Malaria			6	3	1				1				1		1	2					1						4						1			
4a. Malarial cachexia																2																				
12. Asiatic cholera				1																																
14. Dysentery	1		2	1	1			1	1						2	2	1				1						6	5					1			
17. Leprosy			1												1												1									
19. Other epidemic diseases			1																								1									
20. Purulent infection and septichæmia			2	1																	2						2	2	2							
21. Glanders				1																																
23. Rabies			1																																	
24. Tetanus			4						1						1	1											4									
27. Beriberi			4	6					5							3					3						3	2								
28. Tuberculosis of the lungs	2		135	110		1			32						96	80	1				15		1				62	34					2			
29. Acute miliary tuberculosis			1																																	
30. Tuberculous meningitis																1											1									
31. Abdominal tuberculosis			2	5											3	4											6	5								
33. White swellings																																	1			
34. Tuberculosis of other organs									1						1	1																				
35. Disseminated tuberculosis			1								1				1	1																				
37. Syphilis													1		2																					
39. Cancer and other malignant tumors of the buccal cavity				1												4																				
40. Cancer and other malignant tumors of the stomach, liver			1	1											2	2	1				1						3	3								
41. Cancer and other malignant tumors of the peritonæum, intestines, rectum																												1								
42. Cancer and other malignant tumors of the female genital organs				5												1												2								
43. Cancer and other malignant tumors of the breast																3	1											3								
44. Cancer and other malignant tumors of the skin																											1	1								

45. Cancer and other malignant tumors of other organs and of organs not specified			4	2											4	1					2				1		3	6	1							
47. Acute articular rheumatism			1	1											1																					
48. Chronic rheumatism and gout															2												1									
50. Diabetes			1	2											1		1				1						1									
51. Exopthalmic goitre																												1								
54. Anæmia, chlorosis																1												1								
55. Other general diseases			1																																	
56. Alcoholism (acute or chronic)				1																																
59. Other chronic poisonings																																	1			
II. Diseases of the nervous system and of the organs of special sense.																																				
61. Simple meningitis			1	1											1													1								
63. Other diseases of the spinal cord			1																																	
64. Cerebral hæmorrhage, apoplexy	1		5	4	1				4				1		10	10	1				5						15	10		1			3			
65. Softening of the brain				1					3							2					2															
66. Paralysis without specified cause			1	1											4	4											1	2								
67. General paralysis of the insane				1																																
68. Other forms of mental alienation	1		9	2	1		1		2						4						1						2	1								
74. Other diseases of the nervous system																1																				
III. Diseases of the circulatory system.																																				
78. Acute endocarditis			1														1										·1									
79. Organic diseases of the heart	2	1	11	9	1				8		2				5	2					10	1					9	6	1				3			
80. Angina pectoris			5	2											5	1											3	2								
81. Diseases of the arteries, atheroma, aneurysm, etc					1				5				1		1		1				13						1	2					2			
82. Embolism and thrombosis																												1								
IV. Diseases of the respiratory system.																																				
89. Acute bronchitis																											1									
90. Chronic bronchitis																					5						7	4	1				9			
91. Bronchopneumonia			2	2											2	3											1	1	1							
92. Pneumonia			4	1			1		2						3	2											2	3								
93. Pleurisy																1													1							
95. Gangrene of the lungs															1																					
96. Asthma			2													1											4	6								
98. Other diseases of the respiratory system (tuberculosis excepted)															1																					
V. Diseases of the digestive system.																																				
99. Other diseases of the mouth and annexa																											1		1							
100. Diseases of the pharynx																											1									
102. Ulcer of the stomach			2	2	1				1						4	1											2									

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	40 years to 49 years.												50 years to 59 years.												60 years to 69 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
V. Diseases of the digestive system—Ctd.																																				
103. Other diseases of the stomach (cancer excepted)			2	1											3												2	1								
105. Diarrhœa and enteritis (2 years and over)			2	1					1						2	3											2	1		1						
106. Ankylostomiasis			1												1																					
107. Intestinal parasites				1																																
108. Appendicitis and typhlitis			1														1										1									
109. Hernias, intestinal obstructions			3	1					1							1																				
110. Other diseases of the intestines			1																																	
111. Acute yellow atrophy of the liver			2																								2	1								
113. Cirrhosis of the liver					2				2						3	3					3						1	1			1					
114. Biliary calculi																												1								
115. Other diseases of the liver	1		3	1					1						4				1								2									
117. Simple peritonitis (nonpuerperal)			4	3					1						3	1											2									
118. Other diseases of the digestive system (cancer and tuberculosis excepted)			2	1																																
VI. Nonvenereal diseases of the genito-urinary system and annexa.																																				
119. Acute nephritis				2					1						1	1											3	1								
120. Bright's disease	1		8	14			1	1	4						15	18	3				1						13	18	2				3			
122. Other diseases of the kidneys and annexa				1											1												1									
123. Calculi of the urinary passages			2												1												1									
124. Diseases of the bladder															1												1									
126. Diseases of the prostate																											1									
128. Uterine hæmorrhage (nonpuerperal)				2																																
131. Cysts and other tumors of the ovary																												1								
132. Salpingitis and other diseases of the **female genital organs**				1																																

VII. The puerperal state.																																				
135. Puerperal hæmorrhage				3																																
136. Other accidents of labor				1																																
137. Puerperal septichaemia				3																																
138. Puerperal albuminuria and convulsions				1																																
VIII. Diseases of the skin and of the cellular tissue.																																				
142. Gangrene			1													1																				
144. Acute abscess			2																								1										
IX. Diseases of the bones and of the organs of locomotion.																																				
146. Diseases of the bones (tuberculosis excepted)			1						1																											
XIII. Affections caused by external causes.																																				
157. Suicide by hanging or strangulation									2																											
158. Suicide by drowning	1																																			
160. Suicide by cutting or piercing instruments																											1									
167. Burns (conflagration exepted)			1	1																																
169. Accidental drowning			2																		1															
171. Traumatism by cutting or piercing instruments			1																																	
172. Traumatism by fall															2																		1			
174. Traumatism by machines			1																																	
175. Traumatism by other crushing (vehicles, railways, landslides, etc.)															1												2									
182. Homicide by firearms	1																																			
183. Homicide by cutting or piercing instruments																1																				
185. Fractures (cause not specified)			4																																	
186. Other external violence									1																			1								
XIV. Ill-defined diseases.																																				
189. Cause of death not specified or ill-defined				1											2	1											4	8	1						1	
Total	11	1	266	212	9	1	3	2	81		3		4		201	167	12		1		67	1	1		1		194	140	11	2	1		27		1	
Crand total	12		478		10		5		81		3		4		368		12		1		68		1		1		334		13		1		27		1	

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	70 years and over.												Unknown.												Total.												Grand total.
	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
I. General diseases.																																					
1. Typhoid fever																1										1	124	84					1		6		216
4. Malaria				1																					1		35	21	1				10		1		69
4a. Malaria cachexia				1																							4	5									9
5. Smallpox																											1	1									2
6. Measles																											1	1									2
7. Scarlet fever																												1									1
8. Whooping cough																											3	5									8
9. Diptheria and croup																											21	14									35
10. Influenza				1																							6	8		1							15
12. Asiatic cholera																											3	5									8
14. Dysentery			2	4																					5	2	166	127	3		1	2	3		3		312
17. Leprosy			1	1																							7	2									9
18. Erysipelas				1																							5	9									14
19. Other epidemic diseases																											2										2
20. Purulent infection and septichæmia																									2		16	13	2		1		3				37
21. Glanders																												1									1
23. Rabies																											2	1									3
24. Tetanus				2																					1		81	53	2				2				139
27. Beriberi			3	1																					1		251	222					13	1	1	1	490
28. Tuberculosis of the lungs			33	18																	1				2		799	566	4	1			68		7	1	1,448
29. Acute miliary tuberculosis																											2	4									6
30. Tuberculosis miningitis																											38	37									75
31. Abdominal tuberculosis			2	5																							30	42					1				73
32. Pott's disease																											2	1					1				4
33. White swellings																												2					1				3
34. Tuberculosis of other organs																											6	2					1		1		10
35. Disseminated tuberculosis			2																								12	4					1		1		18
36. Rickets																											1	3									4
37. Syphilis																									1		5	1	1								8
39. Cancer and other malignant tumors of the buccal cavity			1	1	1																						2	6	1								9
40. Cancer and other malignant tumors of the stomach, liver			1	4																							10	14	1				1				26

41. Cancer and other malignant tumors of the peritonæum, intestines, rectum																											2	2									4
42. Cancer and other malignant tumors of the female genital organs				3																								18									18
43. Cancer and other malignant tumors of the breast				1																								8	1								9
44. Cancer and other malignant tumors of the skin			1																								2	1									3
45. Cancer and other malignant tumors of other organs and of organs not specified			7	2	1																				1		21	14	2				2				40
46. Other tumors (tumors of the female genital organs excepted)				1																								3									3
47. Acute articular rheumatism																											2	1									3
48. Chronic rheumatism and gout			1	2																							5	3									8
49. Scurvy																											4	2									6
50. Diabetes					1																						4	5	2				1				12
51. Exopthalmic goitre																												2									2
53. Leuchæmia																											1										1
54. Anæmia, cholorosis																											1	2									3
55. Other general diseases																											8	3							1		12
56. Alcoholism (acute or chronic)																												1									1
59. Other chronic poisonings																																	2				2
II. Diseases of the nervous system and of the organs of special sense.																																					
60. Encephalitis																											1						1				2
61. Simple meningitis																									3	1	133	143		1			2	2	3		288
63. Other diseases of the spinal cord																											5	1									6
64. Cerebral hæmorrhage, apoplexy			11	11																					2		49	46	2	1			14				114
65. Softening of the brain			1																								1	4					5				10
66. Paralysis without specified cause			4	2																							11	10									21
67. General paralysis of the insane																												1									1
68. Other forms of mental alienation															1										1		51	14	2		1		3		1		73
69. Epilepsy																											2	1									3
70. Convulsions (nonpuerperal) (5 years and over)																												1									1
71. Convulsions of infants (under 5 years of age)																									1		131	99		1			1	4	1	1	239
73. Hysteria																																			1		1

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	70 years and over.												Unknown.												Total.												Grand total.
	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
II. Diseases of the nervous system—Ctd.																																					
74. Other diseases of the nervous system					1																						3	1	1								5
III. Diseases of the circulatory system.																																					
77. Pericarditis				1																							1	2									3
78. Acute endocarditis			1	1																							9	8	1				3				21
79. Organic diseases of the heart			12	6	1										1										2	2	70	46	3		1		29	1	2	1	157
80. Angina pectoris			3																								22	5									27
81. Diseases of the arteries, atheroma, aneurysm, etc			5	4		1			1																1		8	6	2	1			22				40
82. Embolism and thrombosis																											1	2									3
84. Diseases of the lymphatic system (lymphangitise, tc.)																												1									1
85. Hæmorrhage; other diseases of the circulatory system																												1									1
IV. Diseases of the respiratory system.																																					
87. Diseases of the larynx																											1	1									2
88. Diseases of the thyreoid body																												1									1
89. Acute bronchitis						1																					301	278		1				1			581
90. Chronic bronchitis			6	6																							99	89	1				14				203
91. Bronchopneumonia			4	1																					1		155	154	1			1	2	2			316
92. Pneumonia			2	2																					1	1	37	26			1		3	1			70
93. Pleurisy																											9	7	1								17
94. Pulmonary congestion, pulmonary apoplexy																											5	5									10
95. Gangrene of the lungs																											1										1
96. Asthma			3	2																							12	12									24
97. Pulmonary emphysema																											1										1

98. Other diseases of the respiratory system (tuberculosis excepted)																											1	2									3
V. Diseases of the digestive system.																																					
99. Other diseases of the mouth and annexa																										1	2		1	1							5
100. Diseases of the pharynx																											2	1									3
101. Diseases of the œsophagus																											1										1
102. Ulcer of the stomach			1																								13	3	1				1				18
103. Other diseases of the stomach (cancer exepted)				1																							8	6					1				15
104. Diarrhœa and enteritis (under 2 years)																									3	1	210	179	1		1		2	3		1	401
105. Diarrhœa and enteritis (2 years and over)			3	2																					1	1	103	74		1			1				181
106. Ankylostomiasis																											2										2
107. Intestinal parasites																									1		8	6									15
108. Appendicitis and typhlitis			1																								5	3	1	1			2				12
109. Hernias, intestinal obstructions			1																								21	8					1				30
110. Other diseases of the intestines																											13	5									18
111. Acute yellow atrophy of the liver																											9	1					1				11
113. Cirhosis of the liver				1		1																					8	6	2	1	2		6				25
114. Biliary calculi																											2	2					1				5
115. Other diseases of the liver			1																						1		12	3			1		1				18
116. Diseases of the spleen																											1										1
117. Simple peritonitis (nonpuerperal)																											19	16					1				36
118. Other diseases of the digestive system (cancer and tuberculosis excepted)																											4	1									5
VI. Nonvenereal diseases of the genito-urinary system and annexa.																																					
119. Acute nephritis			3																								45	40					1				86
120. Bright's disease	1		13	12	1																				3		109	124	6		1	1	13		1		258
122. Other diseases of the kidneys and annexa			1																								5	5									10
123. Calculi of the urinary passages																											8	1									9
124. Diseases of the bladder			2																								5	1									6

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	70 years and over.												Unknown.												Total.												Grand total.
	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
VII. Nonvenereal diseases of the genito-urinary system and annexa—Continued.																																					
126. Diseases of the prostate																											1										1
128. Uterine hæmorrhage (nonpuerperal)																												2									2
129. Uterine tnmor (noncancerous)				1																								3									3
130. Other diseases of the uterus																												2									2
131. Cysts and other tumors of the ovary				1																								3									3
132. Salpingitis and other diseases of the female genital organs																												2									2
VII. The puerperal state.																																					
134. Accidents of pregnancy																												7									7
135. Puerperal hæmorrhage																												19				2					21
136. Other accidents of labor																												4									4
137. Puerperal septichæmia																												36									36
138. Puerperal albuminuria and convulsions																										1		11								2	14
VIII. Diseases of the skin and of the cellular tissue.																																					
142. Gangrene			1																								9	2									11
144. Acute abscess																											6	1									7
145. Other diseases of the skin and annexa																											1										1

IX. Diseases of the bones and of the organs of locomotion.																																					
146. Diseases of the bones (tuberculosis excepted)																										2	1					1				4
X. Malformations.																																					
150. Congenital malformations (stillbirths not included):																																					
(1) Hydrocephalus																										1										1
(2) Congenital malformations of the heart																									1	7	2									10
(3) Other congenital malformations																									1	2	1									4
XI. Diseases of early infancy.																																					
151. Congenital debility, icterus and sclerema																									2	1	68	63									134
(1) Premature birth (not stillborn)																									1		13	4				1					19
(2) Congenital debility																										3	251	222					4	2			482
152. Other diseases peculiar to early infancy																											1										1
(1) Injuries at birth (not stillborn)																											4			1							5
(2) Other causes peculiar to early infancy																											15	10									25
XII. Old age.																																					
154. Senility			123	221		1																					123	221		1							345
XIII. Affecttions caused by external causes.																																					
155. Suicide by poison																											1										1
157. Suicide by hanging or strangulation																											2						4				6
158. Suicide by drowning																									1												1
160. Suicide by cutting or piercing instruments																											2						1				3
165b. Other acute poisonings																																	2				2
167. Burns (conflagration excepted)																											8	3									11
168. Absorption of deleterious gases (conflagration excepted)																												1									1
169. Accidental drowning			1																						1		9	6					3		1		20
170. Traumatism by firearms																											2										2

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	70 years and over.												Unknown.												Total.												Grand total.
	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Famale.	
XIII. Affecttions caused by external causes—Ctd.																																					
171. Traumatism by cutting or piercing instruments																											5										5
172. Traumatism by fall																										1	9	3					1				14
174. Traumatism by machines																											1										1
175. Traumatism by other crushing (vehicles, railways, landslides, etc.)																											9	1					1				11
176. Injuries by animals																											1	1									2
181. Electricity (lightning excepted)																											1										1
182. Homicide by firearms																									1												1
183. Homicide by cutting or piercing instruments																											4	3								1	8
185. Fractures (cause not specified)																											12										12
186. Other external violence													1												1		7	2					2		1		13
XIV. Ill-defined diseases.																																					
187. Ill-defined organic diseases																											1	1									2
189. Cause of death not specified or ill-defined				2															1		1						23	20	1		1		3		1		49
Total	1		257	326	6	4			1				1		2	1			1		2				42	18	4,022	3,428	47	13	11	7	264	17	33	8	7,910
Grand total	1		583		10				1				1		3				1		2				60		7,450		60		18		281		41		7,910

DEATHS, BY OCCUPATIONS.

Occupation.	Number.	
	Male.	Female.
Professional:		
Architects, artists, teachers of art, etc	5	---------
Clergymen, priests, nuns, etc	11	6
Engineers and surveyors	5	---------
Journalists	2	---------
Lawyers	6	---------
Musicians and teachers of music	5	1
Nurses and midwives	1	5
Physicians and surgeons	4	---------
Teachers (schools)	10	4
Others of this class	8	---------
Clerical and official:		
Bookkeepers, clerks, and copyists	138	3
Bankers, brokers, and officials of companies	4	---------
Collectors, auctioneers, and agents	8	---------
Stenographers and typewriters	---------	---------
Telegraph and telephone operators	2	1
Others of this class	---------	---------
Mercantile and trading:		
Apothecaries, pharmacists, etc	6	---------
Commercial travellers	2	1
Merchants and dealers	87	9
Hucksters and peddlers	3	3
Shopkeepers	32	84
Others of this class	---------	---------
Public entertainment:		
Hotel and boarding house keepers	---------	---------
Saloon keepers, liquor dealers, bartenders, and restaurants keepers	1	---------
Personal service, police and military:		
Barbers and hairdressers	22	---------
Janitors and sextons	16	---------
Policemen, watchmen, and detectives	17	---------
Soldiers, sailors, and marines	19	---------
Others of this class	4	---------
Laboring and servants:		
Laborers (not agricultural)	637	5
Launderers	19	134
Servants	77	51
Manufacturing and mechanical industry:		
Artificial flower and paper boxmakers	---------	---------
Bakers and confectioners	7	---------
Blacksmiths	8	---------
Boot, shoe, and slipper makers	7	---------
Brewers, distillers, and rectifiers	---------	---------
Butchers	5	3
Cabinet makers and upholsterers	1	---------
Carpenters and joiners	88	---------
Cigar makers and tobacco workers	62	84
Clock and watch repairers, jewellers, etc	13	1
Compositors, printers, etc	14	---------
Coopers	---------	---------
Embroiderers (gold, silk, etc.)	1	15
Engineers and firemen (not locomotive)	17	---------
Glass blowers and glass workers	---------	---------
Hat and cap makers	5	1
Iron and steel workers	2	---------
Leather makers	---------	---------
Leather workers	3	---------
Machinists	24	---------
Marble and stone cutters	11	---------
Masons (brick and stone)	13	---------
Mill and factory operatives (textiles)	---------	---------
Millers (flour and grist)	---------	---------

Deaths, by occupations—Continued.

Occupation.	Number.	
	Male.	Female.
Milliners	--------	--------
Painters, glaziers and varnishers	25	--------
Plumbers, gas and steam fitters	2	--------
Tailors, dressmakers and seamsters	45	165
Tinners and tinware makers	10	--------
Others of this class	18	8
Agriculture, transportation, and other outdoor:		
Boatmen and canalmen	25	--------
Draymen, drivers and teamsters	42	1
Farmers, planters and farm laborers	93	2
Gardenres, florists, nurserymen, etc	10	--------
Liverty stables keepers and hustlers	--------	--------
Lumbermen and raftsmen	1	--------
Miners and quarrymen	--------	--------
Sailors, pilots, fishermen, and oystermen	62	6
Steam railroad employees	1	--------
Stock raisers, herders, and drovers	3	--------
Others of this class	18	--------
All other occupations	187	169
Total	1,974	762
Grand total	2,736	

INFANT MORTALITY.

Causes of death.	Under 24 hours.	24 hours to under 36 hours.	36 hours to under 48 hours.	48 hours to under 14 days.	14 days to under 1 year.	Total.
Abscess					1	1
Left shoulder					1	1
Liver and gall bladder					1	1
Angiocholitis					1	1
Asphyxia	3					3
Neonatorum	6					6
Atelectasis, congenital			1			1
Athrepsia					30	30
Atrophy, infantile					3	3
Beriberi (?)					1	1
Infantile	1			19	364	384
Birth, premature	13	4		2		19
Cephalic tumor and deformity		1				1
Bright's disease					2	2
Bronchitis:						
Acute				4	387	391
Capillary					23	23
Chronic					71	71
Grippal					1	1
Bronchopneumonia					99	99
And dilatation of the heart					1	1
Bilateral acute cardiac dilatation					1	1
Grippal					2	2
Catarrhal:						
Enterocolitis					8	8
Gastroenteritis, acute					1	1
Intestinal, chronic					1	1
Cerebral concussion due to fall					1	1
Cerebrospinal infection from spina bifida					1	1
Cholera infantum					1	1
Colibacillar fever					2	2
Congenital debility	185	37	4	159	97	482
Consumption					8	8
Convulsions of children	2	2	1	48	160	213
Convulsions from high fever following deep abscess of left lumbar region					1	1
Coqueluche					1	1
Cord strangulation during birth	1					1
Diarrhoea and enteritis					31	31
Diphtheria					2	2
Dysentery					27	27
Dyspepsia:						
Atrophic					2	2
Gastrointestinal					5	5
Eczema, generalized, acute					1	1
Empyema					1	1
Endocarditis					1	1
Enteritis					62	62
Enterocolitis					15	15
Erysipelas				1	9	10
Food intoxication from overfeeding					1	1
Gangrene of anal region					1	1
Gastroenteritis					77	77
Grippe					2	2
Haemophilia				2	1	3
Haematomesis				1		1
Haemorrhage:						
Cerebral and meningeal	1	1		2		4
Due to faulty healing of food					1	1
From funis				2		2
From haemophilia				1		1
Gastrointestinal				1		1
Meningeal	1					1
Of the cord				1		1
Pericardial	1					1
Umbilical				6		6
Haemorrhagic disease of the newborn		1		1		2

Infant mortality—Continued.

Causes of death.	Under 24 hours.	24 hours to under 36 hours.	36 hours to under 48 hours.	48 hours to under 14 days	14 days to under 1 year.	Total.
Heart:						
Congenital disease				1	1	2
Congenital lesion					1	1
Congenital malformation				1	2	3
Dilatation					1	1
Acute from pulmonic congestion					1	1
And hypertrophy of the right					1	1
Hypertrophy				1		1
Heriditary syphilis					1	1
Hernia:						
Inguinalincerated debility, infantile and shock surgical					1	1
Umbilical				1		1
Icterus				10	2	12
Gravis neonatorum				1	1	2
Neonatorum				2	2	4
Ileocolitis					4	4
Inanition				2	2	4
Inflammation and gangrene of cord					1	1
Internal hydrocephalus. Subaponeorotic haemorrhage	1					1
Intestinal obstruction	1					1
Intestinal occlusion					1	1
Intestinal stenosis (congenital)				1		1
Intussusception					1	1
Lobar and bronchopneumonia					1	1
Lobar pneumonia				1		1
Malassimilation					1	1
Malformation	1					1
Malnutrition					27	27
Marasmus					76	76
Parrot athrepsia					2	2
Meningitis:						
Acute				1	60	61
Cerebral					14	14
Simple				1	28	29
Suppurative cerebrospinal					1	1
Tuberculous					6	6
Nephritis:						
Acute					13	13
Chronic					2	2
Omphalitis, acute, haemorrhagic icterus, neonatorum and debility infantile					1	1
Patent foremen ovale	1			1		2
Peritonitis					1	1
Postpartum				1		1
Suppurative					2	2
Persistent of foramen Botallo	1					1
Pleurisy					4	4
Pulmonary congestiona				1	3	4
Pulmonary emphysema					1	1
Purpura haemorrhagica				1	1	2
Purulent infection and septichaemia					1	1
Rickets					1	1
Sarcoma					1	1
Scarlet fever				1		1
Scurvy					4	4
Septichaemia					3	3
Shock, secondary to rupture congenital umbilical hernia		1				1
Smallpox					1	1
Syphilis:						
Congenital					1	1
Probably congenital	1					1
Tetanus, infantile				97	6	103
Tuberculosis:						
Miliary					1	1
Pulmonary					1	1
Whooping cough					2	2
Total	220	47	6	375	1,799	2,447

COMPARATIVE MORTALITY FROM JANUARY, 1907, TO DECEMBER, 1917, INCLUSIVE.

Month.	1907		1908		1909		1910	
	Deaths.	Annual death rate per 1,000.	Deaths.	Annual death rate per 1,000.	Deaths.	Annual death rate per 1,000.	Deaths.	Annual death rate per 1,000.
January	632	[a]33.31	1,117	[a]58.87	720	[a]37.94	729	[b]36.64
February	473	[a]27,60	733	[a]41.29	616	[a]35.94	638	[b]35.50
March	464	[a]24.45	720	[a]37.94	618	[a]32.57	642	[b]32.26
April	416	[a]22.65	626	[a]34.09	550	[a]29.95	594	[b]30.85
May	462	[a]24.35	633	[a]33.36	544	[a]28.67	604	[b]30.35
June	402	[a]21.89	678	[a]36.92	552	[a]30.06	646	[b]33.55
July	515	[a]27.14	977	[a]51.49	691	[a]36.41	799	[b]40.15
August	653	[a]34.41	1,148	[a]60.50	679	[a]35.78	731	[b]36.74
September	768	[a]41.82	1,362	[a]74.17	649	[a]35.34	664	[b]34.48
October	877	[a]46.22	991	[a]52.23	700	[a]36.89	705	[b]35.43
November	725	[a]39,48	837	[a]45.58	778	[a]42.37	642	[b]33.34
December	900	[a]47.43	824	[a]43.42	839	[a]44.22	635	[b]31.91
Total	7,287	[a]32.59	10,646	[a]47.62	7,936	[a]35.50	8,029	[b]34.25

Month.	1911		1912		1913		1914	
	Deaths.	Annual death rate per 1,000.	Deaths.	Annual death rate per 1,000.	Deaths.	Annnal death rate per 1,000.	Deaths.	Annual death rate per 1,000.
January	653	[b]32.82	698	[b]35.08	502	[b]25.23	570	[d]25.15
February	536	[b]29.82	611	[b]32.62	445	[b]24.76	499	[d]24.38
March	574	[b]28.85	732	[b]36.79	451	[b]22.66	462	[d]20.39
April	547	[b]28.41	671	[b]34.85	442	[b]22.95	464	[d]31.16
May	609	[b]30.60	701	[b]35.23	504	[b]25.33	430	[d]18.97
June	693	[b]35.99	605	[b]31.42	442	[b]22.95	387	[d]17.65
July	630	[b]41.71	689	[b]34.63	410	[c]19.49	540	[d]23.83
August	878	[b]44.13	705	[b]35.43	439	[c]20.87	581	[d]25.64
September	741	[b]38.48	661	[b]34.33	529	[c]25.99	693	[d]31.60
October	686	[b]34.48	633	[b]31.81	550	[c]26.15	624	[d]27.54
November	762	[b]40.61	573	[b]29.76	590	[c]28.99	651	[d]29.69
December	698	[b]35.08	540	[b]27.14	600	[c]28.53	686	[d]30.27
Total	8,227	[b]35.09	7,819	[b]33.35	5,904	[c]24,48	6,587	[d]24.67

Month.	1915		1916		1917	
	Deaths.	Annual death rate per 1,000.	Deaths.	Annual death rate per 1,000.	Deaths.	Annual death rate per 1,000.
January	678	[d]29.72	634	[d]27.98	485	[d]21.40
February	545	[d]26.63	559	[d]26.37	469	[d]22.91
March	570	[d]25.15	593	[d]26.17	539	[d]23.78
April	551	[d]25.13	567	[d]35.85	500	[d]22.80
May	557	[d]24.58	548	[d]24.18	545	[d]24.05
June	557	[d]25.40	513	[d]23.39	500	[d]22.80
July	605	[d]26.70	573	[d]25.29	555	[d]24.49
August	602	[d]26.57	717	[d]31.64	615	[d]37.14
September	542	[d]24.71	827	[d]37.71	548	[d]24.99
October	553	[d]24.40	551	[d]24.31	598	[d]26.39
November	482	[d]21.98	494	[d]22.53	639	[d]29.14
December	578	[d]25.51	589	[d]25.99	689	[d]30.41
Total	6,820	[d]25.54	7,165	[d]26.84	6,682	[d]25.03

[a] Death rate computed on population of 223,542 (Health census, 1907).
[b] Death rate computed on population of 234,409 (Health census, 1910).
[c] Death rate computed on estimated population 247,756.
[d] Death rate computed on population of 266,943 (Health census, 1914).

MORTALITY COMPARED WITH SAME PERIOD OF PREVIOUS YEARS.

Year.	First quarter.		Second quarter.		Third quarter.		Fourth quarter.		Total.	
	Deaths.	Annual death rate per 1,000.	Deaths.	Annual death rate per 1,000.	Deaths.	Annual death rate per 1,000.	Deaths.	Annual death rate per 1,000.	Deaths.	Annual death rate per 1,000.
1907	1,569	28.48	1,280	22.98	1,936	34.38	2,502	44.43	7,287	**32.59**
1908	2,570	46.14	1,937	34.77	3,487	61.92	2,652	47.09	10,646	**47.62**
1909	1,954	35.47	1,646	29.55	2,019	35.85	2,317	41.14	7,936	**35.50**
1910	2,009	34.78	1,844	31.57	2,194	37.15	1,982	33.56	8,029	**34.25**
1911	1,763	30.52	1,849	31.65	2,449	41.47	2,166	36.68	8,227	**35.09**
1912	2,041	34.94	1,977	33.85	2,055	34.80	1,746	29.57	7,819	**33.35**
1913	1,398	24.20	1,388	23.76	1,378	22.08	1,740	27.88	5,904	**24.48**
1914	1,531	23.27	1,281	19.26	1,814	26.97	1,961	29.16	6,587	**24.67**
1915	1,793	27.25	1,665	25.03	1,749	26.01	1,613	23.98	6,820	**25.54**
1916	1,786	26.85	1,628	24.47	2,117	31.48	1,634	24.30	7,165	**26.84**
1917	1,493	22.69	1,545	23.23	1,718	25.55	1,926	28.64	6,682	**25.03**

CHOLERA AND PLAGUE, CITY OF MANILA.

Nationality.	Cholera.				Plague.			
	Cases.		Deaths.		Cases.		Deaths.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Americans								
Filipinos	13	10	2	6				
Spaniards								
Other Europeans								
Chinese								
All others	2							
Total	15	10	2	6				

District and age.	Cholera.		Plague.	
	Cases.	Deaths.	Cases.	Deaths.
Health districts:				
No. 1, Intramuros	2	1		
No. 2, Meisic	5	1		
No. 4, Sampaloc	6	1		
No. 5, Tondo	9	4		
No. 6, Paco	3	1		
Total	25	8		
Ages:				
Under 1 year	1			
1 year to 9 years	4	2		
10 years to 19 years	2			
20 years to 29 years	8	3		
30 years to 39 years	6	2		
40 years to 49 years	3	1		
50 years and over	1			
Unknown				
Total	25	8		

Number of cases found alive, cholera, 24; plague, 0.
Number of cases found dead, cholera, 1; plague, 0.

SMALLPOX, CITY OF MANILA.

3 cases and 2 deaths of smallpox occurred during the period covered by this report.

Last case occurred November 24, 1917.

Last death occurred November 25, 1917.

VARIOLOID, CITY OF MANILA.

A total of 129 cases of varioloid occurred during the period covered by this report, 9 Americans, 116 Filipinos, 1 Spaniard, 2 English, and 1 Chinese.

VARICELLA, CITY OF MANILA.

A total of 130 cases of varicella occurred during the period covered by this report, 6 Americans, 122 Filipinos, and 2 Chinese.

TUBERCULOSIS CASES REPORTED IN THE CITY OF MANILA DURING THE FISCAL YEAR 1917.

[Closed January 10th, 1918.]

Nationality.	Health districts.										Total.
	No. 1.		No. 2.		No. 4.		No. 5.		No. 6.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Americans					1						1
Filipinos	51	33	232	188	89	58	199	175	67	48	1,140
Spaniards		1							1		2
Other Europeans											
Chinese			20								20
All others					1						1
Total	51	34	252	188	91	58	199	175	68	48	1,164

Also reported 134 males and 65 females, provincial cases; 2 males and 2 females, permanent residence unknown.

RAT CAMPAIGN OPERATIONS.

Number of spring traps set	507,241
Number of rats caught with spring traps	92,113
Number of wire traps set	7,933
Number of rats caught with wire traps	90
Number of poison portions placed	638,937
Number and kind of bait set (coconuts)	494,775
Number of rats found poisoned	5,563
Number of rats killed by clubs and other weapons	13,700
Number of rats found dead from other causes	2,167
Total number of rats otherwise caught or killed	113,633
Number of rats sent to Laboratory for examination	113,633
Number of rats found positive	....

REPORT OF SICK AND WOUNDED POOR ATTENDED BY MUNICIPAL PHYSICIANS.

Health districts and physicians.	Americans.				Foreigners.				Filipinos.			
	Adults.		Children.		Adults.		Children.		Adults.		Children.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
No. 1, Intramuros, Dr. V. Cavanna	1				12	1			1,104	1,040	367	308
No. 2, Meisic, Drs. F. Herrera and C. Reyes	1								326	212	235	200
No. 4, Sampaloc, Dr. F. Castañeda									685	1,147	762	765
No. 5, Tondo, Drs. V. Pantoja and P. Gabriel									860	850	820	702
No. 6, Paco:												
Dr. J. Cabarrús			1	1	2				385	424	221	177
Dr. Tee Han Kee									37	53	22	28
Total	2		1	1	14	1			3,397	3,726	2,427	2,180

Report of sick and wounded poor attended by Municipal Physicians—Ctd.

Health districts and physicians.	Chinese.				Total.	Recoveries.		Deaths.		Visits.
	Adults.		Children.							
	Male.	Female.	Male.	Female.		Male.	Female.	Male.	Feamle.	
No. 1, Intramuros, Dr. V. Cavanna					2,833	503	418	3	3	6,568
No. 2, Meisic, Drs. F. Herrera and C. Reyes	11		1		986	372	309			4,303
No. 4, Sampaloc, Dr. F. Castañeda	2				3,361	176	254			4,222
No. 5, Tondo, Drs. V. Pantoja and P. Gabriel	14				3,246	425	227	3	2	5,710
No. 6, Paco:										
Dr. J. Cabarrús					1,211	287	220	9	5	2,387
Dr. Tee Han Kee	305	1	10		456	316	70			1,624
Total	332	1	11		12,093	2,079	1,498	15	10	24,814

CITY MORGUE REPORT.

Disposition.	Bodies.	Disposition.	Bodies.
Remaining from last year	67	Transferred to—	
Received	1,122	Army Morgue	5
		Government Museum	8
Total	1,189	Philippine Dental College	2
		Provinces	66
Buried by—		Santo Tomas University	4
City	502	Remaining at end of the year	52
Family	550		
		Total	1,189

DISPOSITION OF DEAD BODIES.

Disposition.	Bodies.	Disposition.	Bodies.
Buried at cemetery of—		Remaining in—	
Balicbalic	818	Army Morgue	2
Binondo	3,169	City Morgue	54
Chinese	289	Mary Chiles Hospital (foetus)	1
Norte	2,808	Mary Johnston Hospital (foetus)	1
Pandacan—		Philippine Dental College	2
Filipino church	89	Private Morgue	2
Roman Catholic	30	Santo Tomas Museum (foetus)	1
Santa Ana	109	Santo Tomas University	13
Singalong	673	Transferred to—	
Otherwise disposed of—		Government Museum (foetus)	60
Cremated	45	Provinces	319
		Total	8,485

DISINTERMENTS.

Cemetery.	Number.	Cemetery.	Number.
Balicbalic	31	Norte	13
Binondo	6	Paco	96
Chinese	85	Santa Ana	1
Loma	36	Santa Cruz	49
Loma, New	3	Singalong	1
Malate	2	Tondo	2
		Total	325

GENERAL INSPECTIONS OF HOUSES, PREMISES, VAULTS, ETC., WITH IMPROVEMENTS ORDERED, WHITEWASHED, CLEANED, ETC., BY MEDICAL INSPECTORS, SANITARY INSPECTORS AND ASSISTANT SANITARY INSPECTORS.

1. Inspections of houses by sanitary inspectors	27,858
2. Reinspections of houses for verification of work ordered	5,784
3. Inspections of houses by assistant sanitary inspectors and sanitary policemen	205,868
4. Reinspections of houses by assistant sanitary inspectors and sanitary policemen	86,744
5. Houses ordered cleaned (written)	2,240
6. Houses ordered cleaned (verbal)	23,365
7. Houses cleaned	23,707
8. Houses ordered whitewashed and painted	317
9. Houses whitewashed and painted	307
11. Number of houses recommended condemned and removed	3
12. Number of houses condemned and removed	....
13. Number of localities where "squatters" are located	3
14. Number of samples of water, food, etc., sent to Laboratory	24,179
15. Number of reports for same	16,908
16. Number of fire plugs opened or closed for sanitary purposes	....
17. Number of hydrants recommeded reopened	....
18. Number of houses where garbage has not been removed for two days	49
19. Number of persons reported sick to municipal physicians	17,818
20. Cesspools and vaults ordered cleaned	18
21. Cesspools cleaned	9
22. Yards ordered cleaned	15,090
23. Yards cleaned	14,985
24. Yards ordered repaired (repaved, etc.)	2
25. Yards repaired	3
26. Number of cholera cases reported by sanitary inspectors	14
27. Number of cholera cases found alive	67
28. Number of cholera cases found dead	6
29. Number of orders issued during the year	3,947
30. Number of orders complied with during the year	3,375
31. Number of orders awaiting action	345
32. Number of orders pending in court	12
33. Average number of food tiendas in the districts	3,096
34. Number of persons convicted for violation of food prohibition orders	411
35. Average number of regular inspectors on duty	48
36. Average number of regular emergency inspectors on duty	20
37. Number of lepers sent to San Lazaro Hospital	71
38. Number of plague cases reported	....
39. Number of smallpox cases reported	1

REPORT OF ACTION TAKEN ON APPLICATIONS FOR LICENSES.

Approved	9,295
Disapproved	255
Total acted upon	9,550

CHOLERA IN THE PROVINCES.

[Closed January 28, 1918.]

Towns and provinces.	Cases.	Deaths.	Mortality.
Albay:			*Per ct.*
Albay	87	69	
Bacacay	29	37	
Bato	66	42	
Calolbon	26	10	
Camalig	7	7	
Guinobatan	1	1	
Libog	20	9	
Libon	2	1	
Ligao	26	19	
Malinao	13	5	
Manlilipot	12	9	
Manito	2	2	
Oas	41	32	
Polangui	13	7	
Rapurapu	8	5	
Tabaco	108	61	
Tiwi	1	1	
Virac	3	3	
Total	495	320	64.64
Ambos Camarines:			
Caramoan	53	30	
Nabua	2	1	
Total	55	31	56.36
Antique:			
Bugason	54	35	
Culasi	5	4	
Dao	51	29	
Laua-an	20	7	
Patnongon	33	22	
San Jose	36	26	
San Remigio	30	17	
Sibalom	68	41	
Valderrama	53	31	
Total	350	212	60.57
Bataan:			
Limay	1		
Bohol:			
Alburquerque	15	8	
Anda	6	2	
Antequera	16	12	
Baclayon	6	4	
Balilijan	10	7	
Bilar	4	3	
Butuan	6	5	
Calape	193	146	
Candijay	69	37	
Corella	9	6	
Cortes	24	18	
Dimiao	10	6	
Duero	7	2	
Guindulman	62	39	
Inabanga	49	41	
Jagna	83	67	
Jetafe	20	14	
Lila	3	2	
Loay	13	10	
Loboc	58	42	
Loon	198	116	
Mabini	14	9	
Maribojoc	132	78	
Tagbilaran	2	2	
Talibon	7	6	
Tubigon	195	157	
Ubay	3	3	
Valencia	7	5	
Total	1,221	847	69.36

Cholera in the Provinces—Continued.

Towns and provinces.	Cases.	Deaths.	Mortality.
Bulacan:			
Baliuag	1	1	100.00
Capiz:			
Banga	3	3	
Baton Island	3	3	
Calivo	23	18	
Capiz	21	15	
Dao	6	4	
Dumalag	2	1	
Ibajay	6	2	
Iuisan	42	27	
Jamindan	9	2	
Leso	70	40	
Libacao	7	5	
Makato	23	22	
Mambusao	13	10	
New Washington	99	68	
Panay	9	8	
Panitan	3	3	
Pilar	31	20	
Pontevedra	16	13	
Sapian	57	42	
Sigma	3	3	
Tapaz	3	3	
Total	449	312	69.48
Cavite:			
Alfonso	2	2	
Maragondon	12	10	
Tanza	13	12	
Ternate	1	1	
Total	28	25	89.28
Cebu:			
Alegria	1	1	
Aloguinsan	10	8	
Argao	92	55	
Asturias	7	2	
Barili	16	7	
Bogo	8	4	
Boljoon	1		
Camote Island	43	8	
Carcar	122	66	
Catmon	20	11	
Cebu	99	73	
Dalaguete	127	92	
Danao	8	3	
Dumanjug	134	100	
Ginatilan	25	18	
Liloan	2	2	
Madridejos	15	9	
Malabuyoc	94	76	
Mandawe	1		
Minglanilla	11	4	
Moalbual	3	2	
Naga	3	3	
Opon	34	16	
Oslob	10	4	
Pinamungajan	9	3	
Ronda	35	23	
Samboan	10	5	
San Fernando	10	6	
Sibonga	40	24	
Talisay	23	21	
Toledo	2		
Tuburan	20	10	
Total	**1,035**	**656**	**63.38**
Iloilo:			
Ajuy	46	31	
Arevalo	2	2	
Balasan	2	2	
Banate	22	18	
Barotac Nuevo	19	14	
Buenavista	1	1	
Cabatuan	17	11	
Dingle	7	7	

Cholera in the Provinces—Continued.

Towns and provinces.	Cases.	Deaths.	Mortality.
Iloilo—Continued.			
Dueñas	1		
Dumangas	17	13	
Guimbal	9	3	
Iloilo	45	31	
Janiuay	3	2	
Jaro	41	25	
Leon	2	2	
Lorcha "Talisay"	2	1	
Miagao	113	80	
Oton	23	11	
Passi	6	5	
Pototan	15	12	
San Joaquin	50	24	
San Miguel	3	2	
Santa Barbara	48	37	
Sara	68	42	
Tigbauan	13	5	
Total	575	381	66.26
Leyte:			
Abuyog	8	4	
Alang-alang	12	10	
Barugo	5	5	
Bato	81	45	
Baybay	102	88	
Burawen	121	112	
Cabalian	56	38	
Carigara	7	4	
Dagami	52	47	
Dulag	134	83	
Hilongos	126	98	
Hindang	92	60	
Hinundayan	25	10	
Inopacan	4	4	
Jaro	7	4	
Kawayan	1	1	
Liloan	51	36	
Leyte	54	38	
Maasin	4	3	
Maripipi	3	1	
Matalom	5	5	
Merida	20	7	
Naval	2	1	
Ormoc	292	157	
Palo	58	48	
Palompon	111	89	
Pastrana	11	11	
Pintuyan	37	14	
Tacloban	10	8	
Tanawan	30	27	
Tolosa	20	10	
Villaba	4	3	
Total	1,545	1,071	69.32
Mindanao:			
Agusan—			
Butuan	204	142	
Cabadbaran	180	84	
Gibung	40	14	
Jabonga	42	17	
Talacogon	49	30	
Umayan	19	14	
Wawacjot	55	27	
Total	589	328	55.68
Bukidnon: Bukidnon	35	16	45.71
Misamis—			
Aloran	35	26	
Balingasag	133	71	
Cagayan	458	171	
Catarman	71	42	
Gingoog	64	32	
Initao	44	17	
Jimenez	8	6	
Mambajao	19	14	
Misamis	7	7	
Oroquieta	31	28	

Cholera in the Provinces—Continued.

Towns and provinces.	Cases.	Deaths.	Mortality.
Mindanao—Continued.			
Misamis—Continued.			
Sagay	38	26	
Talisayan	147	66	
Total	1,055	506	47.96
Surigao—			
Cantilan	392	199	
Dinagat	83	72	
Gigakit	81	56	
Lianga	127	51	
Placer	49	36	
Surigao	254	168	
Tandag	132	54	
Total	1,118	636	56.88
Zamboanga—			
Ayala	2	2	
Dapitan	25	17	
Dipulog	76	66	
Lubungan	6	6	
Zamboanga	1	1	
Total	110	92	83.63
Mindoro:			
Calapan	60	15	
Lubang	7	8	
Naujan	3	2	
Total	70	25	35.71
Occidental Negros:			
Bacolod	21	17	
Bago	59	39	
Binalbagan	8	3	
Cadiz	1		
Cagayan	12	5	
Escalante	3	1	
Himamaylan	77	48	
Hinigaran	38	26	
Ilog	35	28	
Isabela	35	15	
Kabankalan	69	33	
La Carlota	25	17	
Manapla	5	4	
Murcia	21	10	
Pontevedra	30	16	
Pulupandan	1	1	
San Carlos	85	57	
Saravia	28	16	
Silay	8	7	
Talisay	70	46	
Valladolid	78	56	
Victorias	3	2	
Total	713	447	62.69
Oriental Negros:			
Ayuquitan	70	50	
Bacon	61	42	
Bais	90	55	
Dawin	131	85	
Dumaguete	182	98	
Larena (Siquijor Island)	13	9	
Luzuriaga	30	17	
Manjuyod	63	35	
Maria	1	1	
Siaton	31	18	
Sibulan	73	41	
Tanjay	153	95	
Tayasan	65	20	
Tolon	128	64	
Vallehermoso	19	6	
Zamboanguita	52	38	
Total	1,162	674	58.00

Cholera in the Provinces—Continued.

Towns and provinces.	Cases.	Deaths.	Mortality.
Rizal:			
Pasay	1		
Pasig	1		
Parañaque	1		
Total	3		
Romblon:			
Badajoz	8	5	
Cajidiocan	9	6	
Romblon	15	7	
Total	32	18	56.25
Samar:			
Allen	84	40	
Balangiga	103	25	
Basey	124	91	
Calbayog	218	165	
Calbiga	56	29	
Capul	38	20	
Catbalogan	30	19	
Dolores	6	1	
Gandara	96	83	
Guiwan	13	6	
Hernani	81	39	
Lao-ang	3		
Lavezares	33	12	
Oquendo	47	39	
Oras	42	17	
Salcedo	25	17	
San Antonio	39	19	
Santa Margarita	27	16	
Santa Rita	2	2	
Tarangnan	36	23	
Tinanbacan	9	5	
Villareal	55	23	
Wright	46	18	
Zumarraga	93	55	
Total	1,306	764	58.49
Sorsogon:			
Aroroy	12	12	
Bacon	126	67	
Barcelona	10	1	
Bulan	191	76	
Bulusan	66	28	
Casiguran	64	41	
Castilla	12	12	
Dimasalang	61	19	
Gubat	29	19	
Irosin	96	37	
Juban	112	60	
Magallanes	15	9	
Prietodiaz	11	5	
San Jacinto	23	10	
San Pascual	2	1	
San Roque	2	1	
Santa Magdalena	1	1	
Sorsogon	232	142	
Total	1,065	541	50.79
Tayabas:			
Torrejos	23	17	
Sta. Cruz, Marinduque	46	39	
Total	69	56	81.15

Cholera in the Provinces—Continued.

SUMMARY, BY PROVINCES.

Provinces.	Cases.	Deaths.	Mortality.
			Per Ct.
Albay	495	320	64.64
Ambos Camarines	55	31	56.36
Antique	550	212	60.57
Bataan	1		
Bohol	1,221	847	69.36
Bulacan	1	1	100.00
Capiz	449	312	69.48
Cavite	28	25	89.28
Cebu	1,035	656	63.38
Iloilo	575	381	66.26
Leyte	1,545	1,071	69.32
Mindanao:			
Agusan	589	328	55.68
Bukidnon	35	16	45.71
Misamis	1,053	506	47.96
Surigao	1,118	636	56.88
Zamboanga	110	92	83.63
Mindoro	70	25	35.71
Occidental Negros	713	447	62.69
Oriental Negros	1,162	674	58.00
Rizal	3		
Romblon	32	18	56.25
Samar	1,306	764	58.49
Sorsogon	1,065	541	50.79
Tayabas	69	56	81.15
Grand total	13,082	7,959	60.83

REPORTS RECEIVED OF BLIND PERSONS LIVING IN THE VARIOUS PROVINCES OF THE PHILIPPINE ISLANDS.

Provinces.	Race.	Children.		Single.		Married.		Widowed.		Total.		
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Total.
Abra	Filipino.			10	4	16	9	3	8	29	21	50
Agusan	do			1	3	2		1	1	4	4	8
Albay	do	13	7	65	55	43	19	6	20	127	101	228
Ambos Camarines	do	7	4	30	16	26	3	11	11	74	34	108
Antique	do	3	5	27	18	20	12	14	17	64	52	116
Bataan	do	1	1	19	7	13	2	5	5	38	15	53
Batanes	do	1	1	1	9	5	5	5	10	12	25	37
Batangas	do	4	1	33	32	29	17	12	18	78	68	146
Bohol	do	11	3	88	78	47	18	15	15	161	114	275
Bukidnon	do											
Bulacan	do		6	28	22	13	5	11	15	52	48	100
Cagayan	do	6		25	15	34	9	5	12	70	36	106
Capiz	do	2	2	34	28	37	21	16	37	89	88	177
Cavite	do	8	6	24	24	17	11	5	16	54	57	111
Cebu	do	4	3	41	44	45	7	6	17	96	71	167
Cotabato	do	1				3			1	4	1	5
Davao	do			5	3	5	1	1	3	11	7	18
Ilocos Norte	do	1	2	17	23	31	13	9	22	58	60	118
Ilocos Sur	do	11	7	36	27	34	18	14	28	95	80	175
Iloilo	do	7	2	33	39	39	13	16	25	95	79	174
Isabela	do											
Laguna	do	9	3	25	19	23	9	4	25	61	56	117
Lanao	do			2		1		1	2	4	2	6
Leyte	do	85	23	280	157	196	106	49	43	610	329	939
Mindoro	do				1	6	2	1	1	7	4	11
Misamis	do	7	6	40	14	29	13	10	9	86	42	128
Nueva Ecija	do	6	3	30	15	22	12	8	14	66	44	110
Nueva Vizcaya	do			5	1	10	2		5	15	8	23
Occidental Negros	do	14	3	49	36	18	10	23	11	104	60	164
Oriental Negros	do	6	1	50	26	21	13	9	13	86	53	139
Palawan	do	1	4	5	6	3	5	3	3	12	18	30
Pampanga	do	13	6	69	43	69	26	37	24	188	99	287
Pangasinan	do	24	18	63	47	59	40	19	32	165	137	302
Rizal	do	3	4	24	23	38	16	12	14	77	57	134
Romblon	do	3	1	12	17	17	2	3	2	35	22	57
Samar	do	16	6	78	40	34	18	11	16	139	80	219
Sorsogon	do	9	7	52	37	30	7	7	6	98	57	155
Sulu	do			1	2					1	2	3
Surigao	do	1		13	4	11	1	4	2	29	7	36
Tarlac	do	10	5	11	12	23	8	10	14	54	39	93
Tayabas	do	12	9	42	19	23	8	7	9	84	45	129
Union	do	3	2	14	10	15	5	6	12	38	29	67
Zambales	do	1	2	13	9	12	4	5	10	31	25	56
Zamboanga	do		1	4				1	1	5	2	7
Total		303	154	1,399	985	1,119	490	385	549	3,206	2,178	5,384

REPORTS RECEIVED OF INSANE PERSONS LIVING IN THE VARIOUS PROVINCES OF THE PHILIPPINE ISLANDS AND IN HOSPITALS.

Provinces and hospitals.	Race.	Children.		Single.		Married.		Widowed.		Total.		Total.
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Abra	Filipino	3	2	26	17	15	7	2	7	46	33	79
Agusan	do			3	2	1		2		6	2	8
Albay	do			43	32	7	8	6	5	56	45	101
Ambos Camarines	do			32	15	11	5	2	6	45	26	71
Antique	do			45	18	13	12	1	5	59	35	94
Bataan	do			11	3	4	5	3	4	18	12	30
Batanes	do			14	5	2			1	16	6	22
Batangas	do	1	1	40	24	17	7	3	7	61	39	100
Bohol	do	6	2	204	148	45	33	9	8	264	191	455
Bukidnon	do											
Bulacan	do		1	29	12	7	11	3	8	39	32	71
Cagayan	do	1		18	10	7	13	4	2	30	25	55
Capiz	do			27	22	14	22	4	16	45	60	105
Cavite	do	2	3	31	13	12	12	3	13	48	41	89
Cebu	do	2		90	48	22	10	4	3	118	61	179
Cotobato	do			3	4	1	1			4	5	9
Davao	do			2		4	1		4	6	5	11
Hospicio de San José.	(a)											288
Ilocos Norte	Filipino	1	2	43	15	19	6	1	5	64	28	92
Ilocos Sur	do			64	33	28	9	8	7	100	49	149
Iloilo	do			45	34	21	14	5	9	71	57	128
Isabela	do											
Laguna	do			23	14	9	8	3	10	35	32	67
Lanao	do			7		4		2		13		13
Leyte	do	11		292	125	62	44	8	25	373	194	567
Mindoro	do				2	4	2	2		6	4	10
Misamis	do	3		61	29	15	5	8	7	87	41	128
Nueva Ecija	do	1	2	22	13	5	5	1	4	29	24	53
Nueva Vizcaya	do			7	2	4	3			11	5	16
Occidental Negros	do	1		33	13	9	9	9	9	52	31	83
Oriental Negros	do			97	37	14	9	9	4	120	50	170
Palawan	do	2	2	17	13	1	2	2	4	22	21	43
Pampanga	do	1		18	14	12	9	2	7	33	30	63
Pangasinan	do	5	5	70	38	65	35	24	28	164	106	270
Rizal	do	1		22	11	9	10	6	4	38	25	63
Romblon	do			7	6	5	7	1	2	13	15	28
Samar	do	1	2	51	40	21	8	6	11	79	61	140
San Lazaro Hospital.	(b)	1		157	54	156	37	16	16	330	107	437
Sorsogon	Filipino			32	15	11	8	1	7	44	30	74
Sulu	do			1						1		1
Surigao	do	3		4	3	4	4		1	11	8	19
Tarlac	do			11	5	5	1		1	16	7	23
Tayabas	do	5	9	101	71	14	20	9	5	129	105	234
Union	do			21	16	15	8	6	6	42	30	72
Zambales	do	1		15	9	4	5		3	20	17	37
Zamboanga	do			5	3		3		1	5	7	12
Total		52	31	1,844	988	698	418	175	265	2,769	1,702	4,759

[a] Race not stated.

[b] Americans, 6; other Europeans, 15; Filipinos, 407; Chinese, 6; others, 3.

REPORT OF HOSPICIO DE SAN JOSE, INSANE DEPARTMENT.

In hospicio January 1, 1917	415
Admitted	39
Discharged	143
Died	23
Remaining at end of the year	288

REPORT OF SERA.

	Remaining at the beginning of the year.	Received from the Bureau of Science.	Total to be accounted for.	Issued.	Remaining at end of the year.
Antidiphtheritic serum .... unit	845,000	2,116,000	2,961,000	2,387,000	574,000
Antidysenteric serum .... cubic centimeter	....	300	300	300	....
Antitetanic serum .... unit	....	839,000	839,000	839,000	....
Antityphoid vaccine .... do	....	2,262	2,262	2,262	....
Cholera serum .... do	....	1,000	1,000	1,000	....
Combined vaccine typhoid and paratyphoid A and B .... ampoules	....	60	60	60	....
Combined vaccine paratyphoid A and B .... do	....	20	20	20	....
Combined vaccine stroptococcus staphylococcus aureaus staphylococcus albus .... do	....	20	20	20	....
Gonococcus vaccine .... do	....	40	40	40	....
Shiga flexner .... tubes	....	1	1	1	....
Streptococcus vaccine .... ampoules	....	10	10	10	....

AMOUNT OF VACCINE VIRUS DISTRIBUTED BY THE PHILIPPINE HEALTH SERVICE.

	Units.
Amount on hand January 1, 1917	3,350
Received from the Bureau of Science	1,256,310
Returned from the provinces	5,000
Total to be accounted for	1,264,660
Distributed as per itemized statement	1,253,410
Remaining on hand December 31, 1917	11,250

PLACES AT WHICH VACCINE VIRUS WAS DISTRIBUTED.

	Units.
Provinces:	
Albay	136,000
Ambos Camarines	39,500
Baguio Hospital	4,260
Bataan	5,800
Batanes	500
Batangas	72,000
Bulacan	51,1000
Cagayan	23,000
Capiz	40,000
Cavite	18,250
Cebu	160,000
Culion Leper Colony	13,400
Hospital Ship "Busuanga"	300
Ilocos Norte	37,200
Ilocos Sur	28,200
Iloilo	90,000
Isabela	23,000
Laguna	28,000
Leyte	10,000
Mindanao	20,400
Mindoro	1,000
Nueva Ecija	9,450
Nueva Vizcaya	7,400
Occidental Negros	5,000
Palawan	2,800
Pampanga	49,250
Pangasinan	107,200
Rizal	23,850
Romblon	300
Samar	22,050
Sorsogon	6,700
Surigao	5,000
Tarlac	18,000
Tayabas	35,850
Union	45,850
Zambales	10,300
Total	1,150,910
Manila:	
Health districts	64,850
Other institutions	37,650
Total	102,500
Grand total	1,253,410

VACCINATIONS, CALENDAR YEAR 1917.

[Closed January 28, 1918.]

	Vaccinations.	Inspections.	Positive.	Negative.
City of Manila:				
Health district—				
No. 1	8,705	2,605	1,446	1,159
No. 2	19,011	2,196	1,394	802
No. 4	10,851	8,483	6,923	1,560
No. 5	25,422	8,181	4,326	3,855
No. 6	17,401	4,944	2,893	2,051
Total	81,390	26,409	16,982	9,427
Provinces:				
Agusan	9,397	1,372	424	948
Albay	113,295	82,459	61,570	20,889
Ambos Camarines	42,859	30,092	19,434	10,658
Bataan	4,378	5,072	3,250	1,822
Batangas	54,693	33,369	20,415	12,954
Bohol	14,994	16,507	6,968	9,359
Bukidnon	410	156	131	25
Capiz	27,882	24,430	17,086	7,344
Cavite	15,155	13,936	8,903	5,033
Cebu	28,653	4,677	3,309	1,368
Laguna	26,232	22,525	14,782	7,743
Mountain	1,321	497	203	294
Misamis	19,303	13,704	7,395	6,309
Occidental Negros	13,877	13,060	7,686	5,374
Oriental Negros	8,061	7,427	4,905	2,522
Palawan	842	840	391	449
Pampanga	47,501	41,930	28,507	13,423
Pangasinan	93,103	82,904	55,791	27,113
Rizal	22,814	19,736	12,012	7,724
Tarlac	22,320	21,146	13,871	7,275
Tayabas	28,633	20,920	15,126	5,794
Union	39,351	31,115	16,379	14,736
Cagayan	15,149	10,603	5,897	4,706
Nueva Vizcaya	5,511	5,238	3,659	1,579
Romblon	3,358	3,358	1,162	2,196
Masbate	1,568	1,182	704	478
Total	660,460	508,255	329,960	178,295
Grand total	741,850	534,664	346,942	187,722

MORTALITY AMONG GOVERNMENT EMPLOYEES.

[Closed January 28, 1918.]

	Americans.	Filipinos.
Average number of employees	1,421	9,561
Deaths reported:		
From illness	4	38
From violence	2	3
Total	6	41
Deaths from illness:		
Average years of service	13.45	7.17
Average age at death	42.62	32.87
Annual death rate per thousand	2.81	3.97
Deaths from violence:		
Average year of service	2.34	3.62
Average age at death	30.25	28.54
Annual death rate per thousand	1.40	0.31
Total deaths:		
Average years of service	10.83	6.86
Average age at death	39.00	32.53
Annual death rate per thousand	4.22	4.28

Both nationalities:	
Population	10,982
Number of deaths	47
Average years of service	7.20
Average age at death	36.16
Annual death rate per thousand	4.31

All deceased are mates.

BAGUIO HOSPITAL.

HOSPITAL CASES.

Diseases.	Remaining at last report.	Admitted.	Died.	Discharged.	Remaining.
1. Typhoid fever	3	6	1	8	------
4. Malaria	1	46	------	45	------
9. Diphtheria and croup	------	4	1	3	------
10. Influenza	------	20	------	20	------
14. Dysentery	------	20	3	17	------
18. Erysipelas	------	1	------	1	------
19. Other epidemic diseases	1	17	------	18	------
20. Purulent infection and septichæmia	------	1	------	1	------
28. Tuberculosis of the lungs	5	20	1	15	9
31. Abdominal tuberculosis	------	1	------	1	------
33. White swellings	------	1	------	1	------
34. Tuberculosis of other organs	------	6	1	5	------
35. Disseminated tuberculosis	------	2	2	------	------
37b. Syphilis, secondary	------	4	------	4	------
37c. Syphilis, tertiary	------	5	------	5	------
38b. Gonococcus infection	------	25	------	25	------
46. Other tumors (tumors of the female genital organs excepted)	------	2	------	2	------
47. Acute articular rheumatism	------	11	------	11	------
48. Chronic rheumatism and gout	------	2	------	2	------
55. Other general diseases	------	1	------	1	------
56. Alcoholism (acute or chronic)	------	3	------	3	------
62. Locomotor ataxia	------	2	------	2	------
66. Paralysis without specified cause	------	3	------	3	------
68. Other forms of mental alienation	------	1	------	1	------
71. Convulsions of infants	------	4	------	4	------
73b. Neuralgia and neuritis	------	3	1	2	------
74. Other diseases of the nervous system	------	3	------	3	------
75a. Follicular conjunctivitis	------	5	------	5	------
75c. Other diseases of the eyes and their annexa	1	6	------	7	------
76. Diseases of the ears	------	3	------	3	------
78. Acute endocarditis	------	1	------	1	------
79. Organic diseases of the heart	1	3	------	4	------
83. Diseases of the veins (varices, hæmorrhoids, phlebitis, etc.)	------	1	------	1	------
84. Diseases of the lymphatic system (lymphangitis, etc.)	------	3	------	3	------
86. Diseases of the nasal fossæ	------	3	------	3	------
89. Acute bronchitis	------	48	1	46	1
91. Bronchopneumonia	------	5	3	2	------
92. Pneumonia	------	9	2	7	------
93. Pleurisy	------	2	------	2	------
96. Asthma	1	2	------	3	------
98. Other diseases of the respiratory system (tuberculosis excepted)	------	1	------	1	------
99a. Diseases of the teeth and gums	------	2	------	2	------
99b. Other diseases of the mouth and annexa	------	6	------	6	------
100. Diseases of the pharynx	1	7	------	8	------
102. Ulcer of the stomach	------	1	------	1	------
103. Other diseases of the stomach (cancer excepted)	1	59	------	60	------
104. Diarrhœa and enteritis (under 2 years)	------	4	------	4	------
105. Diarrhœa and enteritis (2 years and over)	------	15	------	14	1
107. Intestinal parasites	------	15	------	15	------
108. Appendicitis and typhlitis	------	11	------	11	------
110a. Diseases of the anus and fæcal fistulas	------	1	------	1	------
110b. Other diseases of the intestines	------	8	------	8	------
113. Cirrhosis of the liver	------	1	------	1	------
115. Other diseases of the liver	1	1	------	2	------
118. Other diseases of the digestive system (cancer and tuberculosis excepted)	------	2	------	2	------
119. Acute nephritis	------	1	------	1	------
120. Bright's disease	------	3	1	1	1
122. Other diseases of the kidneys and annexa	------	1	1	------	------
124. Diseases of the bladder	------	6	1	5	------
125. Diseases of the urethra, urinary abscess, etc	------	1	------	1	------
130a. Metritis	------	4	------	4	------
130b. Other diseases of the uterus	------	13	------	13	------
131. Cysts and other tumors of the ovary	------	1	------	1	------
133. Nonpuerperal diseases of the breast (cancer excepted)	------	2	------	2	------
134a. Normal labor	1	58	------	59	------
134b. Accidents of pregnancy	------	15	------	15	------
135. Puerperal hæmorrhage	------	1	------	1	------
136. Other accidents of labor	------	11	------	11	------
137. Puerperal septichæmia	------	1	------	1	------
138. Puerperal albuminuria and convulsions	1	------	------	1	------
142. Gangrene	------	2	------	2	------
143. Furuncle	------	4	------	3	1
144. Acute abscess	------	16	------	16	------
145a. Trichophytosis (tineas and peladas)	------	3	------	3	------

Baguio Hospital—Continued.

Diseases.	Remaining at last report.	Admitted.	Died.	Discharged.	Remaining.
145b. Scabies		5		5	
145c. Other diseases of the skin and annexa		6		6	
146. Diseases of the bones (tuberculosis excepted)		1		1	
147. Diseases of the joints (tuberculosis and rheumatism excepted)	1	1		2	
149. Other diseases of the organs of locomotion		4		4	
150(3). Other congenital malformations		2		2	
151(1). Nurslings discharged from hospital without disease	1	53		54	
151(2). Congenital debility, icterus and sclerema		5	5		
167. Burns (conflagration excepted)	1	7	1	5	2
170. Traumatism by firearms		1			1
171. Traumatism by cutting or piercing instruments	1	12		13	
172. Traumatism by fall		2		2	
173. Traumatism in mines and quarries		2		2	
175. Traumatism by other crushing (vehicles, railways, landslides, etc.)	1	8		9	
176. Injuries by animals	1	1		2	
182. Homicide by firearms	1	2		3	
184. Homicide by other means		1	1		
185a. Dislocations		2		2	
185b. Sprains		2		2	
185c. Fractures (cause not specified)		10	1	9	
186. Other external violence		3		3	
187. Ill-defined organic disease		1		1	
189a. Cause of death not specified or ill-defined		5		5	
189b. No disease, feigned disease		4		4	
Total	25	720	27	702	16

Patients treated in the outdoor department at the Baguio Hospital	5,999

LABORATORY EXAMINATIONS.

Specimen.	Nationality.					Total
	Americans.	Europeans.	Filipinos.	Chinese.	All Others.	
Blood	7	17	8	1		33
Faeces	50	24	58	2	1	135
Pus	1	4	18		35	58
Sputum	4	2	18			24
Urine	73	51	91	5	15	235
Gonococcus			5			5
Total	135	98	198	8	51	490

SUMMARY AND MISCELLANEOUS.

New cases admitted to hospital	698
Patients' visits to hospital clinic	12,481
Patients who attended hospital clinic	6,296
Prescriptions filled	8,883
Operations performed:	
Major	30
Minor	371
Surgical dressings, hospital clinic	3,496
Civil Service employees examined	3
Chauffeurs examined	38

BONTOC HOSPITAL.

HOSPITAL CASES.

Diseases.	Remaining at last report.	Admitted.	Discharged.	Died.	Remaining.
4. Malaria	6	32	36	2	
6. Measles		30	30		
10. Influenza	7	5	12		
14. Dysentery	1	13	9	5	
17. Leprosy		5	2		3
18. Erysipelas		6	6		
19. Other epidemic diseases		23	23		
20. Purulent infection and septichæmia	2	5	6		1
25. Mycoses	1		1		
27. Beriberi		3	2	1	
28. Tuberculosis of the lungs		5	2	1	2
34. Tuberculosis of other organs	1	2	3		
38a. Soft chancre		1	1		
38b. Gonococcous infection	1	2	3		
46. Other tumors (tumors of the female genital organs excepted)		2	2		
47. Acute articular rheumatism		3	3		
48. Chronic rheumatism and gout		8	8		
49. Scurvy		1	1		
54. Anæmia, chlorosis		7	7		
61. Simple meningitis		1		1	
69. Epilepsy		1	1		
71. Convulsions of infants, under 5 years of age		1		1	
73a. Hysteria		1	1		
73b. Neuralgia and neuritis		4	4		
74. Other diseases of the nervous system		2	2		
75a. Follicular conjunctivitis	2	3	15		
80. Angina pectoris		1	1		
84. Diseases of the lymphatic system (lymphangitis, etc		1	1		
85. Hæmorrhage; other diseases of the circulatory system		2	2		
89. Acute bronchitis	2	2	23		
90. Chronic bronchitis		7	7		
91. Bronchopneumonia		2	2		
92. Pneumonia		2	2		
94. Pulmonary congestion, pulmonary apoplexy		1	1		
98. Other diseases of the respiratory system (tuberculosis excepted)		1	1		
99b. Other diseases of the mouth and annexa		4	4		
100. Diseases of the pharynx	1	8	3	1	
103. Other diseases of the stomach (cancer excepted)	2	36	36	2	
105. Diarrhœa and enteritis, 2 years and over		13	11	2	
107. Intestinal parasites		3	3		
110a. Diseases of the anus and faecal fistulas	1		1		
110b. Other diseases of the intestines		1	1		
113. Cirrhosis of the liver		1	1		
114. Biliary calculi		1	1		
115. Other diseases of the liver		2	1	1	
117. Simple peritonitis (nonpuerperal)		2	1	1	
120. Bright's disease	1	2	3		
124. Diseases of the bladder		1		1	
127. Nonveneral diseases of the male genital organs		2	2		
128. Uterine hæmorrhage (nonpuerperal)		2	2		
130a. Metritis		2	2		
130b. Other diseases of the uterus		1	1		
133. Nonpuerperal diseases of the breast (cancer excepted)		1	1		
134b. Accidents of pregnancy		3	3		
136. Other accidents of labor		1	1		
140. Following childbirth not otherwise defined		16	16		
143. Furuncle	1	3	4		
144. Acute abscess	1	12	12		1
145a. Trichophytosis (tineas and peladas)	9	95	86		18
145b. Scabies		1			1
145c. Other diseases of the skin and annexa		21	19		2
146. Diseases of the bones (tuberculosis excepted)	1	1	2		
147. Diseases of the joints (tuberculosis and rheumatism excepted)		1	1		
151-2. Congenital debility, icterus and sclerema		4	4		
154. Senility		4	2	2	
165b. Other acute poisonings		1	1		
167. Burns (conflagration excepted)	1	4	5		
171. Traumatism by cutting or piercing instruments		2	2		
176. Injuries by animals	1	2	3		
185a. Dislocations		1	1		
185c. Fractures (cause not specified)	1	1	2		
186. Other external violence	1	28	29		
189a. Cause of death not specified or ill-defined		26	26	1	
Total	44	518	512	22	28

Bontoc Hospital—Continued.

Patients treated in the outdoor department at the Bontoc Hospital	10,544
Cases treated in the outdoor department at the Bontoc Hospital	3,113
Cases treated in the provincial health stations by medical officers or assistant sanitary inspectors, Mountain Province	18,880

LABORATORY EXAMINATIONS.

Specimen.	Nationality.				
	Americans.	Europeans.	Filipinos.	Igorots.	Total.
Blood			6	45	51
Faeces	1	1	26	39	67
Pus	3			1	4
Sputum		1	2	5	8
Urine	3		8	17	28
Total	7	2	42	107	158

MISCELLANEOUS.

Patients admitted	518
Patients remaining from last year	44
Hospital days	11,508
Average hospital days per patient	20.47
Daily average per patient	31.50
Deaths	22

CHINESE HOSPITAL SICK REPORT.

[Dr. Tee Han Kee, physician in charge.]

In hospital last year	34
Received	541
Discharged	431
Transferred	1
Died	100
Remaining in hospital at end of year	43

CULION LEPER COLONY.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Remaining at last report	3		4		2,731	1,512	2		9	4	4,265
Admitted	1				410	197	3		2		613
Readmitted	1				37	2					30
Born					39	35					74
Died			1		315	136			3		455
Discharged	1		1		1	2					5
Escaped					33	4					37
Remaining	4		2		2,858	1,604	5		5	4	4,485

BILIBID PRISON REPORT OF SICK.

Diseases.	Remaining at last report.	Admitted.	Died.	Transferred.	Discharged.	Remaining.
1. Typhoid fever		1	1			
4. Malaria	3	102	1		104	
5. Smallpox		6		6		
Cholera carriers	104	94		12	186	
Amœbiasis intestinal	4	170			174	
14. Dysentery	6	73	1		77	1
17. Leprosy		3		2	1	
19. Other epidemic diseases		116		1	106	9
20. Purulent infection and septichæmia	1	15			16	
28. Tuberculosis of the lungs	73	84	67	7	39	44
29. Acute miliary tuberculosis		2	2			
31. Abdominal tuberculosis	2	8	5		5	
34. Tuberculosis of other organs	3	14	1		14	2
35. Disseminated tuberculosis		1	1			
87a. Syphilis, primary	1	5			6	
37b. Syphilis, secondary		3			3	
37c. Syphilis, tertiary	1	20			18	3
38b. Gonococcus infection		50			44	6
40. Cancer and other malignant tumors of the stomach, liver		2	2			
45. Cancer and other malignant tumors of other organs or of organs not specified		2			2	
46. Other tumors (tumor of the female genital organs excepted)	1	16			17	
47. Acute articular rheumatism		25			23	2
48. Chronic rheumatism and gout	9	26			30	5
54. Anæmia, chlorosis	1				1	
55. Other general diseases		3			3	
59. Other chronic poisonings	4	159			163	
61. Simple meningitis		1	1			
62. Locomotor ataxia		3			3	
64. Cerebral hæmorrhage, apoplexy		1	1			
66. Paralysis without specified cause		2			2	
68. Other forms of mental alienation		20		20		
69. Epilepsy	1	3	1		3	
73a. Hysteria		1			1	
73b. Neuralgia and neuritis		2			2	
74. Other diseases of the nervous system		1	1			
75b. Trachoma		3			3	
75c. Other diseases of the eyes and their annexa	1	55			52	4
76. Diseases of the ears		3			3	
78. Acute endocarditis		1	1			
79. Organic diseases of the heart		7	5		2	
81. Diseases of the arteries, atheroma, aneurysm, etc		1				1
83. Diseases of the veins (varices, hæmorrhoids, phlebitis, etc.)	1	68			67	2
84. Diseases of the lymphatic system (lymphangitis, etc.)		3			3	
86. Diseases of the nasal fossæ		14			14	
87. Diseases of the larynx		1			1	
89. Acute bronchitis		4			4	
91. Bronchopneumonia		1	1			
92. Pneumonia		29	8		17	4
93. Pleurisy		9			7	1
95. Gangrene of the lungs		1	1			
96. Asthma	8	22			28	2
98. Other diseases of the respiratory system (tuberculosis excepted'		1			1	
99a. Diseases of the teeth and gums		5			5	
99b. Other diseases of the mouth and annexa		8			8	
100. Diseases of the pharynx		1			1	
102. Ulcer of the stomach		3			3	
103. Other diseases of the stomach (cancer excepted)		4			4	
105. Diarrhœa and enteritis (2 years and over)		19			19	
106. Ankylostomiasis	22	1, 109			1, 129	2
107. Intestinal parasites	15	965			976	4
108. Appendicitis and typhlitis		9	1		8	
109. Hernias, intestinal obstructions	1	24			24	1
110a. Diseases of the anus and faecal fistulas		10			10	
110b. Other diseases of the intestine		16			16	
115. Other diseases of the liver		1			1	
117. Simple peritonitis (nonpuerperal)		2			2	
119. Acute nephritis		1	1			
120. Bright's disease		1				1
122. Other diseases of the kidneys and annexa		1	1			
123. Calculi of the urinary passages		1	1			
125. Diseases of the urethra, urinary abscess, etc		2			2	

Prison Sanitation—Continued.

Dieases.	Remaining at las report.	Admitted.	Died.	Transferred.	Discharged.	Remaining.
127. Nonvenereal diseases of the male genital organs	1	55			53	3
130b. Other diseases of the uterus		3			3	
132. Salpingitis and other diseases of the female genital organs		4			4	
134b. Accidents of pregnancy		1			1	
136. Other accidents of labor		9			8	1
137. Puerperal septichæmia		1	1			
142. Gangrene	1				1	
143. Furuncle		1			1	
144. Acute abscess	1	16			16	1
145a. Trichophytosis (tineas and peladas)	11	78			63	26
145b. Scabies		19			8	11
145c. Other diseases of the skin and annexa		21			16	5
146. Diseases of the bones (tuberculosis excepted		6			6	
147. Diseases of the joints (tuberculosis and rheumatism excepted)	1	1			2	
149. Other diseases of the organs of locomotion		2			2	
150. Congenital malformations (stillbirths not included)		19			18	1
167. Burns (conflagration excepted)		3			3	
170. Traumatism by firearms		1			1	
171. Traumatism by cutting or piercing instruments		7			7	
172. Traumatism by fall		2	1		1	
185a. Dislocations	2	2			4	
185b. Sprains		3			3	
185c. Fracture (cause not specified)	2	4			5	1
186. Other external violence		10			10	
187. Ill-defined organic disease		1				1
189. Cause of death not specified or ill-defined	17	273			279	11
Total	298	3,981	107	49	3,968	155

BILIBID PRISON LABORATORY EXAMINATIONS.

Blood	7,680
Faeces	19,397
Sputum	6,161
Urine	10,811
Miscellaneous	298
Total	44,347
Blood specimens taken for Wasserman reaction	350

SUMMARY AND MISCELLANEOUS.

Patients attended in the dressing room	30,545
Major operations performed	23
Minor operations performed	237
Prescriptions filled	9,932
Vaccinations made	11,502
Autopsies held	51

Prison sanitation—Continued.

BILIBID PRISON REPORT OF DEATHS.

Diseases.	Presidio.				Carcel.					Conditions.			
	Filipinos.		Chinese.		Filipinos.		Chinese.						
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Total.	Married.	Single.	Widowed.	Unknown.
1. Typhoid	1								1		1		
4. Malaria					1				1			1	
14. Dysentery	1								1		1		
20. Purulent infection and septichæmia	1								1	1			
28. Tuberculosis of the lungs	56	1			10		2		69	41	20	6	2
29. Acute miliary tuberculosis	1								1	1			
31. Abdominal tuberculosis	3				1				4	2	1	1	
32. Pott's disease	1								1	1			
35. Disseminated tuberculosis	2								2	1	1		
40. Cancer and other malignant tumors of the stomach, liver	1		1						2	2			
59. Other chronic poisonings							1		1	1			
61. Simple meningitis	1								1		1		
64. Cerebral hæmorrhage, apoplexy	1								1	1			
68. Other forms of mental alienation	2	1			3		1		7	3	1	2	1
74. Other diseases of the nervous system	1								1	1			
79. Organic diseases of the heart	2				1	1			4	2	1	1	
91. Bronchopneumonia	1						1		2		2		
92. Pneumonia	4				2		1		7	2	4	1	
103. Other diseases of the stomach (cancer excepted)	1								1	1			
108. Appendicitis and typhlitis	1								1			1	
119. Acute nephritis							1		1			1	
120. Bright's disease	2								2	2			
122. Other diseases of the kidneys and annexa	1								1		1		
137. Puerperal septichæmia						1			1	1			
142. Gangrene	1								1		1		
172. Traumatism by fall	1								1	1			
Total	86	2	1		18	2	7		116	64	35	14	3

Died in Bilibid Hospital	107
Legally executed	0
Died in San Lazaro Hospital	9
Total	116

SAN LAZARO HOSPITAL.

INSANE DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In hospital last year	7		8	1	274	66	5		2		363
Admitted	24	4	14	4	191	128	59		8	1	433
Discharged	22	4	5	3	77	53	54		6	1	225
Transferred	1		1		9	13	1				25
Escaped					1						1
Died	2		3		76	23	3		1		108
Remaining	6		13	2	302	105	6		3		437

San Lazaro Hospital—Continued.

LEPER DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In hospital last year					103	51					154
Admitted	2		1		226	90	9		1		329
Discharged			1		58	33	7				99
Transferred	2				113	48			1		164
Escaped					53	10					63
Died					9	4					13
Remaining					96	46	2				144

MORGUE AND CREMATORY DEPARTMENT.

Disposition.	Bodies.
Remaining from last year	0
Received:	
Beriberi	1
Bronchopneumonia	1
Cholera	7
Cerebral haemorrhage	2
Cerebral hemiplegia	1
Dementia, terminal	3
Dementia, praecox	1
Diphtheria	37
Drowning	1
Dysentery	14
Eclampsia acute partum	1
Erysipelas	1
Fracture of skull	1
Glanders	1
Hydrophobia	1
Intestinal obstruction	1
Leprosy	9
Lobar pneumonia	1
Meningitis	2
Possible cholera	4
Possible plague	1
Probable smallpox	1
Pulmonary congestion	1
Pulmonary tuberculosis	220
Smallpox	2
Stillborn	1
Syphilis	1
Tetanus	40
Typhoid fever	14
Violence	1
Other diseases	159
Total	531
Dropped:	
Burried by—	
Bureau of Prisons	4
City	254
Chinese cemetery	2
Family	119
Cremated	52
Turned over to Army Morgue	1
Turned over to family	98
Remaining at end of the year	1
Total	531
Autopsies held	46

SOUTHERN ISLANDS HOSPITALS.

HOSPITALS CASES.

Diseases.	Remaining at last report.	Admitted.	Died.	Transferred.	Escaped.	Discharged.	Remaining.
1. Typhoid fever	2	37	7			31	1
4. Malaria	1	31				32	
5. Smallpox		7				7	
6. Measles	1	6				6	1
9. Diphtheria and croup	1	4	1			4	
12. Asiatic cholera		45	28			17	
Cholera carriers		234		1	8	225	
14. Dysentery		21	2			18	1
17. Leprosy	1	15		8	1	7	
18. Erysipelas		6	1			4	1
19. Other epidemic diseases		54			7	47	
20. Purulent infection and septichæmia		3				3	
24. Tetanus		2				2	
25. Mycoses		1				1	
27. Beriberi	1	45	14			30	2
28. Tuberculosis of the lungs		19	3		1	14	1
29. Acute miliary tuberculosis		2	1			1	
31. Abdominal tuberculosis		6	1			3	2
33. White swellings		1					1
34. Tuberculosis of other organs		6				6	
35. Disseminated tuberculosis		1				1	
37. Syphilis		2				1	1
37b. Syphilis secondary		3				3	
37c. Syphilis tertiary		2				2	
38a. Soft chancre		2				2	
38b. Conococcus infection	1	13			1	13	
39. Cancer and other malignant tumors of the buccal cavity		5				5	
40. Cancer and other malignant tumors of the stomach, liver		1				1	
43. Cancer and other malignant tumors of the breast		2				2	
44. Cancer and other malignant tumors of the skin	1	4				4	1
45. Cancer and other malignant tumors of other organs or of organs not specified		6				5	1
46. Other tumors (tumors of the female genital organs excepted)		25				25	
47. Acute articular rheumatism	1	9				8	2
48. Chronic rheumatism and gout		2				2	
54. Anæmia, chlorosis		3				3	
55. Other general discases		1				1	
56. Alcoholism (acute or chronic)		1	1				
60. Encephalitis		1	1				
61. Simple meningitis		1	1				
61a. Cerebrospinal fever		1	1				
64. Cerebral hæmorrhage, apoplexy		2	2				
66. Paralysis without specified cause		5	1			4	
69. Epilepsy		2				2	
73b. Neuralgia and neuritis		5				5	
74. Other diseases of the nervous system		5				5	
75a. Follicular conjunctivitis		5				5	
75b. Trachoma		3				3	
75c. Other diseases of the eyes and their annexa	1	14				13	2
76. Diseases of the ears		3				3	
79. Organic diseases of the heart		3				3	
80. Angina pectoris		1				1	
81. Diseases of the arteries, atheroma, aneurysm, etc		2				2	
83. Diseases of the veins (varices, haemorrhoids, phlebitis, etc.)	2	11				13	
84. Diseases of the lymphatic system (lymphangitis, etc.)		13				12	1
85. Haemorrhage; other diseases of the circulatory system		1				1	
86. Diseases of the nasal fossae		5				5	
89. Acute bronchitis		26	1			25	
91. Bronchopneumonia		12	3			8	1
92. Pneumonia		11	3			8	
93. Pleurisy		3				3	
96. Asthma		2				2	
99a. Diseases of the teeth and gums		6	1			4	1
99b. Other diseases of the mouth and annexa		8	1			7	
100. Diseases of the pharynx		23				23	
102. Ulcer of the stomach		2				2	
103. Other diseases of the stomach (cancer excepted)		18	1			17	
104. Diarrhoea and enteritis (under 2 years)		13	5			7	1
105. Diarrhoea and enteritis (2 years and over)		26	3			23	

Southern Islands Hospitals—Continued.

Diseases.	Remaining at last report.	Admitted.	Died.	Transferred.	Escaped.	Discharged.	Remaining.
106. Ankylostomiasis	5	90	1		1	85	8
107. Intestinal parasites	10	267	2		2	253	20
108. Appendicitis and typhlitis		24				23	1
109. Hernia, intestinal obstruction	3	25				28	
110a. Diseases of the anus and faecal fistula		12				11	1
110b. Other diseases of the intestines		9	1			8	
113. Cirrhosis of the liver		7				7	
115. Other diseases of the liver		3	1			2	
116. Diseases of the spleen		2				2	
117. Simple perotinitis (nonpuerperal)		8	1			6	1
119. Acute nephritis		4				4	
120. Bright's disease		19	9			9	1
123. Calculi of the urinary passages		12				11	1
124. Diseases of the bladder		7				7	
125. Diseases of the urethra urinary abscess, etc		2				2	
126. Diseases of the prostate		1				1	
127. Nonvenereal diseases of the male genital organs		28				24	4
128. Uterine hæmorrhage (nonpuerperal)		5				5	
129. Uterine tumors (noncancerous)		5				5	
130a. Metritis	1	8				7	2
130b. Other diseases of the uterus	1	19	1			18	1
131. Cysts and other tumors of the ovary	1	8				9	
132. Salpingitis and other diseases of the female genital organs		8				8	
133. Nonpuerperal diseases of the breast (cancer excepted)		6				5	1
134a. Normal labor	1	37				38	
134b. Accidents of pregnancy		22	3			19	
135. Puerperal hæmorrhage		2				2	
136. Other accidents of labor	1	6	2			5	
137. Puerperal Septichæmia		10	4			5	1
142. Gangrene	1	1	1			1	
143. Puruncle		8				8	
144. Acute abscess	1	48	1			46	2
145a. Trichophytosis (tineas and peladas)		1				1	
145b. Scabies		3				2	1
145c. Other diseases of the skin and annexa	1	20	1		1	19	
146. Diseases of the bones (tuberculosis excepted)		5				5	
147. Diseases of the joints (tuberculosis and rheumatism excepted)		4				4	
148. Amputations		3				3	
150. Congenital malformations (stillbirths not included)		3				3	
150. (3) Other congenital malformations		4				4	
151. (1) Premature births (not still born)		2				2	
151. (2) Congenital debility		3	2			1	
152. (1) Injuries at births (not stillborn)		1	1				
153. Lack of care	3	13	8			8	
154. Senility		1				1	
159. Suicide by firearms		1					1
161. Suicide by jumping from high place		1				1	
167. Burns (conflagration excepted)	1	10	2		1	8	
171. Traumatism by cutting or by piercing instruments	4	49	1		1	47	4
172. Traumatism by fall		1				1	
174. Traumatism by machines		4				3	1
175. Traumatism by other crushing (vehicles, railways landslides, etc.)		30	1			27	2
176. Injuries by animals		3				3	
185a. Dislocations		2				2	
185c. Fractures (cause not specified)	3	25				28	
186. Other external violence		10				10	
187. Ill-defined organic disease		4				4	
189a. Cause of death not specified or ill-defined		2	1			1	
189b. No disease, feigned disease	2	29				31	
Total	52	1,807	127	9	24	1,625	74

Patients treated in the outdoor department at the Southern Islands Hospital........ 11,915

Southern Islands Hospitals—Continued.

SUMMARY AND MISCELLANEOUS.

	Hospital.	Outpatients.
Number of new patients		2,867
Total number of patients admitted	1,331	
Visit by outpatients		43,791
Prescriptions filled:		
Charity		20,891
Government free		1,234
Number of surgical dressings:		
Charity	5,096	24,739
Government free	185	717
Government pay		110
Private pay		511
Number of major operations performed:		
Charity	103	
Government free	14	
Government pay	8	
Private pay	16	
Number of minor operations performed:		
Charity	111	634
Government free	14	24
Government pay	10	7
Private pay	30	17
Number of vaccinations performed		6
Patients:		
Charity	1,030	20,043
Government free	140	989
Government pay	36	102
Private pay	141	352
Clinics:		
Births	8	
Dental		144
Eye, ear, nose and throat	22	1,732
Genito-urinary	26	5
Gynecological	1	69
Medical	228	15,551
Medical, contagious	138	
Obstetrical	33	
Surgical	196	26,026
Physical examinations		46

LABORATORY EXAMINATIONS.

Specimen.	Americans.	Other Europeans.	Filipinos.	All others.	Total.
Blood	8	12	99	3	122
Faeces	47	25	756	16	844
Sputum	1	1	17	1	20
Urine	40	28	690	16	774
Miscellaneous	2	6	11		19
Total	98	72	1,573	36	1,779

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